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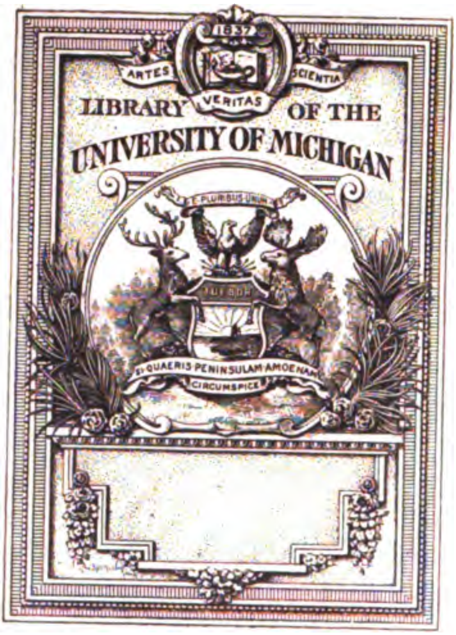

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ANNUAL REPORTS

OF THE

PRESIDENT AND TREASURER

OF

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1880-81.

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PRESIDENT'S REPORT FOR 1880-81.

To the Board of Overseers: —

The President of the University has the honor to submit the following report for the academic year 1880–81, namely, from Sept. 30, 1880, to Sept. 29, 1881: —

The University must long lament the loss of Benjamin Peirce, Perkins Professor of Astronomy and Mathematics, who died on the 6th of October, 1880, in the seventy-second year of his age and the fiftieth year of his service as a college teacher. His mind was both brilliant and profound, his influence inspiring and far-reaching; and his eminence in science and philosophy exalted the University and reflected honor upon the country.

RESIGNATIONS.

Charles Pickard Ware, Instructor in English, October 11, 1880.
Alfred W. Field, Proctor, October 11, 1880.
Charles W. Barnes, Proctor, October 11, 1880.
Robert S. Avann, Proctor, October 11, 1880.
Eugene Wambaugh, Proctor, October 11, 1880.
Frederic H. Hedge, Professor of German, February 14, 1881.
Sylvester Primer, Proctor, March 30, 1881.
Andrew Preston Peabody, Preacher to the University and Plummer Professor of Christian Morals, March 30, 1881.
Barrett Wendell, Instructor in English, June 1, 1881.
Frank Waldo, Assistant in the Observatory, September 26, 1881.
John Henry Wheeler, Tutor in Greek and Latin, September 26, 1881.
Robert W. Greenleaf, Assistant in Botany, September 26, 1881.

In accepting the resignation of Frederic H. Hedge, D.D., Professor of German since 1872, the Corporation could not but remember with satisfaction that for nine years, at least, the University had had the benefit of Dr. Hedge's services as a teacher, and of his established reputation and influence as a student of language, history, and philosophy, and as a master of style.

At the end of the year, Dr. Andrew P. Peabody, in fulfilment of a purpose formed long before, retired from the position of Preacher to the University and Plummer Professor. For twenty-one years Dr. Peabody had been both preacher and teacher, and had discharged the duties of his delicate and responsible office with unvarying fidelity, kindliness, and dignity. By his moderation and independence he had done much to fix the character of the office, and to make it impossible that it should hereafter be held by any but a man of the broadest catholicity. He retired in the full enjoyment of health and strength, and with the affectionate respect of all the officers and students of the University, past and present, who have known him. The Corporation, in accepting his resignation, directed that his name be continued upon the University catalogue as Preacher and Plummer Professor Emeritus.

APPOINTMENTS.

[UNLIMITED, OR FOR TERMS LONGER THAN ONE YEAR.]

William James, to be Assistant Professor of Physiology for five years from December 1, 1880, April 25, 1881.

Bennett Hubbard Nash, to be Professor of Italian and Spanish, April 25, 1881.

Francis Greenwood Peabody, to be Parkman Professor of Theology, May 9, 1881.

George Alonzo Bartlett, to be Assistant Professor of German for five years from September 1, 1881, May 9, 1881.

Adrien Jacquinot, to be Assistant Professor of French for five years from September 1, 1881, May 9, 1881.

Walter Faxon, to be Assistant Professor of Zoölogy for five years from September 1, 1881, May 9, 1881.

Charles Loring Jackson, to be Professor of Chemistry, May 9, 1881.

William Elwood Byerly, to be Professor of Mathematics, May 9, 1881.

Louis Dyer, to be Assistant Professor of Greek and Latin for five years from September 1, 1881, May 30, 1881.

Henry Willard Williams, to be Professor of Ophthalmology, June 27, 1881.

James Clarke White, to be Professor of Dermatology, June 27, 1881.

Ernest Young, to be Instructor in History, October 11, 1880.

Edward Emerson Phillips, to be Tutor in Latin and Greek for three years from September 1, 1880, October 11, 1880.

John Henry Wheeler, to be Tutor in Latin and Greek for three years from September 1, 1880, October 11, 1880.

Charles Sedgwick Minot, to be Instructor in Oral Pathology and Surgery, October 11, 1880.

Manuel Jacob Drennan, to be Instructor in English, May 9, 1881.

Frederick Lutz, to be Tutor in German for three years from September 1, 1881, May 30, 1881.

James Greenleaf Croswell, to be Tutor in Greek and Latin for three years from September 1, 1881, May 30, 1881.

Edward Laurens Mark, to be Instructor in Zoölogy, June 8, 1881.

Francis Winthrop Dean, to be Tutor in Engineering for three years from September 1, 1881, June 27, 1881.

Howard Malcolm Ticknor, to be Instructor in Elocution, July 12, 1881.

George Riddle, to be Instructor in Elocution, July 12, 1881.

Henry Preble, to be Tutor in Latin and Greek for three years from September 1, 1881, September 26, 1881.

Frank William Taussig, to be Proctor, October 11, 1880.

Gerrit Smith Sykes, to be Proctor, October 11, 1880.

William Schofield, to be Proctor, November 8, 1880.

Sylvester Primer, to be Proctor, January 10, 1881.

Henry Champion Jones, to be Proctor, April 11, 1881.

Frank William Taussig, to be Secretary for the President, October 11, 1880.

[FOR ONE YEAR OR LESS.]

For 1880–81.

Francis Greenwood Peabody, to be Lecturer on Ethics and Homiletics, October 11, 1880.

Charles Edward Faxon, to be Instructor in Botany, October 11, 1880.

Benjamin Marston Watson, to be Instructor in Horticulture, October 11, 1880.

Edward Burgess, to be Instructor in Entomology, October 11, 1880.

Lester Sackett Ford, to be Demonstrator in Zoölogy, October 11, 1880.

Barrett Wendell, to be Instructor in English, October 11, 1880.

Freeman Snow, to be Instructor in Forensics, October 11, 1880.

Manuel Jacob Drennan, to be Instructor in English, October 25, 1880.

Grenville Stanley Hall, to be University Lecturer on Pedagogy and on Contemporary German Philosophy, November 8, 1880.

Carroll D. Wright, to be University Lecturer on the Factory System, February 28, 1881.

Edward Cornelius Briggs, to be Clinical Instructor in the Dental School, October 11, 1880.

John Thomas Codman, to be Clinical Instructor in the Dental School, October 11, 1880.

Timothy Otis Loveland, to be Clinical Instructor in the Dental School, October 11, 1880.

Charles Wilson, to be Clinical Instructor in the Dental School, October 11, 1880.

Albert Benton Jewell, to be Clinical Instructor in the Dental School, October 11, 1880.

Edwin Perley Bradbury, to be Clinical Instructor in the Dental School, October 11, 1880.

Manning Kennard Rand, to be Demonstrator of Operative Dentistry, October 11, 1880.

George Franklin Grant, to be Demonstrator of Operative Dentistry, October 11, 1880.

James Read Chadwick, to be Clinical Instructor in Gynaecology, January 10, 1881.

Thomas Buckminster Curtis, to be Clinical Instructor in Diseases of the Urinary Organs, January 31, 1881.

Edward Hickling Bradford, to be Clinical Instructor in Orthopedic Surgery, January 31, 1881.

Oliver Fairfield Wadsworth, to be Clinical Instructor in Opthalmoscopy, January 31, 1881.

William Carroll Emerson, to be Assistant in Chemistry, January 10, 1881.

Walter Joseph Otis, to be Prosector in Surgical Anatomy, January 31, 1881.

For 1881–82.

Edwin Herbert Hall, to be Instructor in Physics, April 25, 1881.

Freeman Snow, to be Instructor in Forensics and History, June 8, 1881.

James Lawrence Laughlin, to be Instructor in Political Economy, June 8, 1881.

George Bendelari, to be Instructor in Modern Languages, June 8, 1881.

Henry Howland, to be Instructor in Torts, June 8, 1881.

Joseph Henry Allen, to be Lecturer on Ecclesiastical History, June 8, 1881.

Francis Barton Gummere, to be Instructor in English, June 27, 1881.

Benjamin Osgood Peirce, Jr., to be Instructor in Mathematics, July 12, 1881.

Franklin Haven Sargent, to be Instructor in Elocution, July 12, 1881.

Leonard Parker Kinnicutt, to be Assistant in Chemistry, June 8, 1881.

William Harlow Melville, to be Assistant in Mineralogy, June 8, 1881.

Charles Frederic Mabery, to be Assistant in Chemistry, June 8, 1881.

Robert Willard Greenleaf, to be Assistant in Botany, June 8, 1881.

Charles Henry Morss, to be Assistant in Biology, June 8, 1881.

John Eliot Wolff, to be Assistant in Geology, June 8, 1881.

Charles Robert Sanger, to be Assistant in Organic Chemistry, June 8, 1881.

Harold Whiting, to be Assistant in Physics, June 8, 1881.

John Robinson, to be Assistant in the Arboretum, June 8, 1881.

Henry Champion Jones, to be Assistant in Botany, September 26, 1881.

Joseph Pearson Oliver, to be Clinical Instructor in Diseases of Children, June 8, 1881.

Thomas Morgan Rotch, to be Clinical Instructor in Diseases of Children, June 8, 1881.

Amos Lawrence Mason, to be Clinical Instructor in Auscultation, June 8, 1881.

Frederic Cheever Shattuck, to be Clinical Instructor in Auscultation, June 8, 1881.

James Read Chadwick, to be Clinical Instructor in Diseases of Women, June 8, 1881.

Thomas Buckminster Curtis, to be Clinical Instructor in Diseases of the Urinary Organs, June 8, 1881.

Edward Hickling Bradford, to be Clinical Instructor in Orthopedic Surgery, June 8, 1881.

Oliver Fairfield Wadsworth, to be Clinical Instructor in Ophthalmoscopy, June 8, 1881.

Charles Follen Folsom, to be Lecturer on Mental Diseases, June 8, 1881.

Frank Winthrop Draper, to be Lecturer on Forensic Medicine, June 8, 1881.

Charles Sedgwick Minot, to be Lecturer on Embryology, June 8, 1881.

William Palmer Bolles, to be Instructor in Materia Medica, June 8, 1881.

Samuel Gilbert Webber, to be Clinical Instructor in Diseases of the Nervous System, June 8, 1881.

Clarence John Blake, to be Clinical Instructor in Otology, June 8, 1881.

John Orne Green, to be Clinical Instructor in Otology, June 8, 1881.

James Jackson Putnam, to be Clinical Instructor in Diseases of the Nervous System, June 8, 1881.

Edward Newton Whittier, to be Instructor in the Theory and Practice of Physic, June 27, 1881.

John Homans, to be Clinical Instructor in the Diagnosis and Treatment of Ovarian Tumors, June 27, 1881.

Francis Augustus Harris, to be Demonstrator of Medico-Legal Examinations.

Charles Sedgwick Minot, to be Instructor in Oral Pathology and Surgery, June 27, 1881.

George Franklin Grant, to be Demonstrator in Mechanical Dentistry, June 27, 1881.

Virgil Clarence Pond, to be Demonstrator in Operative Dentistry, June 27, 1881.

Elbridge Gerry Cutler, to be Assistant in Pathological Anatomy, June 8, 1881.

William Sturgis Bigelow, to be Assistant in Surgery, June 8, 1881.

George Minot Garland, to be Assistant in Physiology, June 8, 1881.

Maurice Howe Richardson, to be Assistant in Anatomy, June 8, 1881.

William Carroll Emerson, to be Assistant in Chemistry, June 8, 1881.

Walter Joseph Otis, to be Prosector in Surgical Anatomy, June 8, 1881.

Henry Parker Quincy, to be Assistant in Histology, June 8, 1881.

Thomas Waterman, to be Assistant in Anatomy, June 8, 1881.

Francis Henry Davenport, to be Assistant in Gynaecology, June 27, 1881.

Charles Jason Staples, to be Librarian in the Divinity School, June 27, 1881.

Benjamin Reynolds Bulkley, to be Proctor in the Divinity School, June 27, 1881.

William Gray, Henry J. Bigelow, and Thomas G. Appleton, to be Trustees of the Museum of Fine Arts for one year from January 1, 1881, January 10, 1881.

There has recently been some discussion in the University concerning the relative advantages of the three recognized modes of filling professorships: namely, by promoting gentlemen who have served here successfully in lower grades; by inviting hither professors in other institutions; and by calling to professorships gentlemen who have never been teachers, but who have otherwise distinguished themselves in theology, law, medicine, literature, or science. Each of these methods has merits of its own. The first supplies well-proved professors, and makes the lower grades of university service reasonably attractive to young men who propose to make teaching their life-work; the second brings to one institution valuable experience and information acquired in other institutions and communities, and if it were commonly resorted to in this country, as it is in Germany, would be here, as there, a strong incentive to capable and ambitious young professors; the third brings fresh blood into the profession of teaching. In a long-established institution having a numerous staff it is easiest to use the first method, safest to use the first and second, but wisest to use all three. The third method is chiefly applicable to appointments in theology, law, and medicine, and in those departments of literature and science in which men give good evidence of great attainments through their writings. In the learned professions merit is brought to public tests which are likely to demonstrate, among other things, fitness or unfitness for teaching; but in other departments of learning it may be very hard to discover whether large attainments are, or are not, accompanied in a given individual by any faculty for teaching. Hence the indisputable advantages of the third method of appointment are only to be reaped at some risk.

The following lists, which contain the names of all the present professors and assistant professors of the University, give in each case the date of appointment and the previous service, if any.

Professors who did not serve this University in any lower grade.

O. W. Holmes	1847
A. Gray * †	1842
H. A. Hagen * ‡	1870
H. J. Bigelow	1849
H. L. Eustis	1849
J. R. Lowell	1855
J. D. Whitney *	1865
W. Gibbs * †	1863
D. D. Slade	1871
G. M. Lane	1851
C. C. Everett	1869
C. F. Dunbar	1871
C. C. Langdell	1870
J. B. Thayer	1873
F. H. Storer †	1870
C. H. Toy * †	1880
J. C. Gray	1875
C. S. Sargent	1872
N. S. Shaler ‡	1869
E. C. Pickering †	1876
C. R. Lanman * †	1880

* Not a graduate of Harvard University.

† Came from a professorship or assistant professorship in another institution.

‡ Previously assistant in the Museum of Zoölogy.

Professors who previously served in some lower grade, but not more than two years.

J. Lovering	1838	Tutor, 1836–38.
C. E. Norton	1875	Lecturer, 1874–75.
H. W. Williams	1871	“ 1869–71.
T. H. Chandler	1871	Adjunct Professor, 1869–71.
J. P. Cooke	1851	Tutor, 1849–50.
F. D. Allen *†	1880	“ 1873–74.
F. G. Peabody	1881	Lecturer, 1880–81.

Professors who previously served in some lower grade or grades more than two years.

F. Bowen	1853	Tutor, 1835–39.
E. A. Sophocles *	1860	Tutor, 1842–45 and 1847–59; Assistant Professor, 1859–60.
H. W. Torrey	1856	Tutor, 1844–48.
E. Abbot *	1872	Assistant Librarian, 1856–72; Lecturer, 1869–72.
F. Minot	1874	Instructor, 1869–71, Assistant Professor, 1871–74.
J. P. Reynolds	1877	“ 1869–77.
F. J. Child	1851	Tutor, 1846–51.
C. Ellis	1867	Adjunct Professor, 1863–67.
W. W. Goodwin	1860	Tutor, 1856–60.
F. Bôcher *†	1870	Instructor, 1861–65.
D. W. Cheever	1875	Adjunct Professor, 1868–75; previously Demonstrator.
E. W. Gurney	1869	Tutor, 1857–63; Assistant Professor, 1863–69.
A. S. Hill	1876	Assistant Professor, 1872–76.
J. M. Peirce	1869	Tutor, 1854–58, Assistant Professor, 1861–69.
J. C. White	1871	Adjunct Professor, 1866–71.
B. H. Nash	1881	Instructor, 1866–71, Assistant Professor, 1871–81.
R. T. Edes	1875	Assistant Professor, 1870–75.
J. K. Paine *	1875	Instructor, 1862–73; Assistant Professor, 1873–75.
G. L. Goodale *†	1878	Instructor, 1872–73; “ “ 1873–78.
H. P. Bowditch	1876	Assistant Professor, 1871–76.
L. D. Shepard *	1879	Adjunct Professor, 1868–79.
R. H. Fitz	1878	Instructor, 1870–73; Assistant Professor, 1873–78.
J. Trowbridge †	1880	Assistant Professor, 1870–80.
W. G. Farlow	1879	“ “ 1874–79.
C. L. Jackson	1881	“ “ 1871–81; Assistant, 1868–71.
E. S. Wood	1876	“ “ 1871–76.
J. B. Ames	1877	Tutor, 1871–72; Instructor, 1872–73; Assistant Professor, 1873–77.
W. E. Byerly †	1881	Assistant Professor, 1876–81.

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* Not a graduate of Harvard University.

† Came from a professorship or assistant professorship in another institution.

Assistant Professors who did not serve this University in any lower grade.

C. J. White†	1870.	D. A. Sargent*	1879.

Assistant Professors who previously served in some lower grade.

A. Jacquinot*	1876	Instructor, 1872–73; Tutor, 1873–1876.
J. B. Greenough	1873	Tutor, 1865–73.
W. A. Rogers*	1877	Assistant at the Observatory, 1870–77.
W. Cook*	1879	Instructor, 1873–79.
C. L. Smith	1873	Tutor, 1870–73.
G. H. Palmer	1873	Tutor, 1870–73; Instructor, 1873.
G. A. Bartlett*	1876	Instructor, 1872–73; Tutor, 1873–76.
W. James	1876	Instructor, 1872–74.
J. W. White*	1877	Tutor, 1874–77.
H. B. Hill	1874	Assistant in Chemistry, 1870–74.
C. A. Brackett	1880	Instructor, 1874–80.
W. Faxon	1881	Instructor, 1872–73, 1877–81; Assistant.
L. Dyer	1881	Tutor, 1878–81.

It appears from these lists that twenty-one professors and two assistant professors were appointed to those grades respectively without having previously served here in any lower grade, and that of these twenty-three persons nine had held appointments in other institutions. On the other hand, it appears that thirty-five professors and thirteen assistant professors were appointed after having served here successfully in lower grades, and that of these forty-eight persons five had held appointments in other institutions. Out of fifty-six professors thirteen, or nearly one fourth, are not graduates of the University, and out of fifteen assistant professors six, or two fifths, are not graduates of the University. Of the seventy-one appointments here recorded fifty-five have been made since the beginning of the year 1869, and of this latter number fifteen (including two professors appointed from the Museum of Zoölogy before it became part of the University) were appointments not based on previous service in this University. These fifteen appointments were distributed as follows: —

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* Not a graduate of Harvard University.

† Came from an assistant professorship in another institution.

Professors drawn from other institutions	5
Lawyers (for Law professorships)	3
Minister (for a professorship of Theology)	1
Physicians	2
Editor	1
Naturalists (including two Assistants in the Museum)	3
	15

To obtain a complete view of the working of the existing methods of appointment and promotion, it is not enough to examine the steps by which the present professors and assistant professors reached their places; it is also necessary to inquire, first, how many persons have in recent years been appointed tutors, instructors, or assistant professors, but are no longer in the service; and, secondly, how many persons have been appointed tutors or instructors, and are still in the service in those capacities without advancement. To answer the first of these inquiries, a list is printed in the Appendix (I.) of all the persons appointed tutors, instructors, or assistant professors since 1860, who are no longer in the service. Annual appointments are not included in this list; because every such appointment is avowedly made for a temporary purpose, and implies no intention of renewal on the part of the University. The list contains the names of thirty-nine persons, of whom six are dead. The remaining thirty-three may be classified as follows: —

Became connected with other colleges (5 as full professors)	9
" teachers in other ways	8
" lawyers	4
" men of science	4
" authors or students	5
" dentists	2
" U. S. civil servant	1
	33

The second of the above inquiries is answered by the list, which may be found in the Appendix (II.), of all persons who have been appointed tutors or instructors since 1860, and are still in the service in those capacities. As before, annual appointments are not included in the list. Of the twenty-two appointments which the list contains, nine are not more than three years old, five others are not more than six years old, and none is more than ten years old. Six of the appointments are, moreover, in the Medical School, a department in which appointments are affected by considerations peculiar to itself. It is proper to add that these two lists contain the names of some of the best teachers and most useful men who have ever been, or are now, in the service of the University.

It will be obvious to any one who examines the above lists, particularly if he be acquainted with the whole careers of the persons whose names they bear, that the lower grades of the service are more and more filled with young men who have made elaborate preparation for the profession of teaching, and whose desire it is to teach single subjects to advanced students rather than the elements of a larger range of subjects to beginners. Now the professorial staff of a single institution cannot possibly afford outlet enough for all the young men of decided merit who pass the appropriate number of years in the lower grades of its service, even if the unwise rule prevail that no professorial appointments are made except by promotion within the corps. Other suitable outlets are obviously necessary, and a careful study of the lists printed in the Appendix shows that they are beginning to be found. They are chiefly professorships and instructorships in other colleges, masterships of academies and high schools, journalism and authorship, the scientific professions, and superintendencies and supervisorships of schools. The most appropriate of these outlets is the service of other universities; but the field in which there is the most urgent need of highly trained and devoted laborers is the great field of secondary education.

Another fellowship for graduates was added in the summer of 1881 to the seven which the University already possessed. The new fellowship is a peculiarly welcome gift, because it is to bear the honored and beloved name of the late James Walker, D.D., who was a Fellow of the Corporation nineteen years, an Overseer seventeen years, Alford Professor fifteen years, and President of the University seven years. The fund was raised by subscription among the pupils and friends of Dr. Walker, and now amounts to $10,000. In awarding the fellowship, the President and Fellows are to give the preference to a student of ethics, metaphysics, and those related branches of knowledge to which Dr. Walker chiefly devoted his life.

Two new scholarships, one of the annual value of $300, and one of $200, will be established in the Medical School from a part of the bequest of the late Edward M. Barringer of Schenectady. Mr. Barringer was a younger brother of John B. Barringer of Schenectady, the benefactor from whom the Scientific School received, upon his death in 1872 at twenty-three years of age, a bequest of more than $30,000. These estimable young men never had any connection, direct or indirect, with this University; but each, dying early without heirs or near relatives, was found to have bequeathed nearly the whole of his modest fortune to the President and Fellows of Harvard College, one selecting the Scientific School and the other the Medical School as the department to be benefited. The University will requite the spontaneous benevolence of these two young strangers towards it by keeping their names in tender remembrance, and faithfully doing, generation after generation, the good work for which they made provision. These two scholarships are the first which have been endowed in the Medical School.

The subject of the best distribution of scholarships and other beneficiary funds among the different departments of the University requires the attention of the governing boards and of intending benefactors. First instituted here in 1670, but chiefly given during the past thirty years, these endowments were all in aid of students in theology or arts, until Edward M. Barringer provided in 1880 for two scholarships in medicine. About $40,000 a year are now paid out in scholarships, loans, and other pecuniary aids to poor students; of which considerable sum about one eighth is paid to students of theology, somewhat more than one seventh to Bachelors of Arts or Science who are pursuing studies not professional, and about five sevenths to candidates for the degree of Bachelor of Arts. Of the money paid to undergraduates in arts, two thirds are returned to the College in tuition-fees; but the other two departments receive but a small return in this way. It is now desirable that the number of scholarships open to Bachelors of Arts or Science should be doubled or trebled; and that fifteen or twenty endowed scholarships should be founded in the Law School, and twice that number in the Medical School. The annual value of these scholarships ought not to be less than $250 apiece, and need not exceed $500. They should be awarded to students who are at once poor, able-bodied, and of proved capacity; and students and graduates of other institutions should be made welcome to the competition for them. Bachelors of Arts or Science coming from other colleges with evidences of high standing should be eligible in the first year of their residence at Cambridge.

These new needs result from changes which have taken place in the University since 1871. When the Law School only required a residence of eighteen months, and held no examinations whatever, and the Medical School only required attendance upon three annual courses of lectures which were all given between November 1st and March 1st, it was a comparatively easy and inexpensive matter to pass through either of these Schools with credit; but now each School demands three years of continuous and strenuous labor, which leaves neither time nor strength for simultaneously earning a livelihood. To make the best use of the opportunities and privileges of either School requires the student's undivided attention and force; so that the student who is compelled by poverty to give part of his time to teaching or other productive labor does not graduate from the School so well equipped as he would otherwise have been, and thus suffers a loss which must affect injuriously not him only but the School. If it be said that the student of law or medicine is pursuing a professional study which is intended to enable him soon to earn his living, the answer is that for the present needs of the student of law or medicine the prospective income of his early years of practice is unavailable except as security on which to borrow money, and that this security is not marketable. If it be said that a capable man of twenty-one years of age ought to be able to lay up in advance money enough to support him during three years of professional study, let it be considered in reply how few are the occupations open to very young men in which as much as $1,500 can be laid by in any moderate number of years, even with the utmost industry and economy, and how sharp is the competition for such lucrative places. In that competition a young man who seeks a place only for a temporary purpose, without intending to remain in the business, whatever it may be, is at a serious disadvantage. As a matter of fact, it has already become very difficult, though not impossible, for a young man to win his way through either the Law School or the Medical School without help from parents or friends; and since the difficulty of this undertaking must increase from year to year, as population becomes denser, special preparation for trades and other callings completer and commoner, and the demands of the Schools themselves greater, both Schools will finally be inaccessible to poor students, no matter how meritorious and promising, unless scholarships are established in them. The President invites the special attention of the Overseers to the full discussion of this subject and of the true conception of professional education in a university, which will be found in the subjoined report of the Dean of the Law School.

The graduate department in arts can hardly be said to have existed before 1869, and has been, in the main, developed during the past ten years. Its students have been in great part Harvard Bachelors of Arts or Science, and the seven scholarships, or fellowships, which it has possessed, have generally been used to maintain graduates of Harvard at European universities. The department needs a number of scholarships which would enable graduates of other American colleges to pursue their studies here. This need might be met, temporarily and in part, by using some of the scholarships, which are now attributed exclusively to the undergraduate department, for graduates or undergraduates indifferently, in such proportions as might in each year seem most expedient; and the terms of gift of many of the scholarship funds would doubtless permit this extension of their application to this new class of students in arts; but the need can be really supplied only by the endowment of new scholarships intended especially for persons who are already Bachelors of Arts or Science.

There is another new and increasing class of students in arts to whom there is good reason for extending the benefits of the scholarships and other beneficiary funds, namely, the unmatriculated, or special, students in arts. These students are persons who join the University, without passing any admission examinations, and without aiming immediately at any degree, to study such subjects as they themselves select, and are found by the instructors in those subjects competent to pursue. The category naturally includes a considerable variety of persons; but the great majority of the students who have belonged to it have been desirable members of the University, and some of them have been young men of unusual power and merit. Increase in the number of these special students will not only add directly to the influence and usefulness of the University as a teaching body, but will also have an indirect effect of perhaps equal value. If all competent young men can freely pursue here the studies of their choice on equal terms with any other students, the University does not refuse to give instruction when it maintains rigid requisitions for its degrees; it only denies these traditional testimonials to persons who do not fulfil all the prescribed conditions. To increase the number of special students it is necessary to assimilate their discipline and privileges in all respects to those of other students in arts, and especially to make them eligible to scholarships and all other beneficiary appointments.

Early in the year 1880–81 a circular was sent to the parents or guardians of the 828 undergraduates, asking if they held daily family prayers in their households. The number of families addressed was not so large as the number of students; for some families had more than one son in College, a few students had neither parents nor guardians, and in a few cases the parents or guardians were inaccessible. The number of replies received was 741; of which 211, or two sevenths, answered Yes, and 530, or five sevenths, answered No. Nine persons who answered Yes expressed the desire, nevertheless, that attendance at College prayers should be voluntary, and thirty-six of those who answered No expressed the desire that attendance should be compulsory. Some of the negative replies stated that the practice had been discontinued, and gave reasons for the discontinuance, such as residence in the suburbs and the necessity of catching early trains for the city, the growing up of all the children and their departure from home, the presence of invalids in the family, and the different religious opinions and practices of masters and servants. The object of the inquiry was to ascertain how much support morning prayers at College had in the habits of the families from which the students came.

The resignation of the Plummer Professor, which took effect at the close of the year, and the non-appointment of a successor, obliged the Corporation to make a provisional arrangement for the conduct of the week-day prayers and the services of Sunday morning in Appleton Chapel. They placed the matter in the hands of a committee consisting of the President and five members of the Academic Council; and this Committee in June last made the arrangements which went into effect at the beginning of the current year. The hour of morning prayers was changed from a quarter before eight to a quarter before nine; and all the ministers officially connected with the University and living in Cambridge or Boston were invited to conduct prayers by turns, each for a few weeks. Nine ministers, belonging to four different denominations, will accordingly conduct prayers, each for about a month, during the current year. After some experiments the two ministers, members of the Board of Overseers, — the Rev. Drs. Edward E. Hale and Phillips Brooks, — who conducted prayers during October and November, settled upon a convenient and interesting order of service, in which the daily responsive reading of a psalm was introduced, and the musical element in the service was increased. The committee further provided for the Sunday services by inviting eminent ministers of various denominations to occupy the pulpit a Sunday at a time. The cost of these provisional arrangements for the current year was limited to the amount of the former salary of the Plummer Professor. The whole experiment, which was entered upon not voluntarily but from necessity, has proved both interesting and instructive.

In the last annual Report (p. 27) a table was given which showed the net reduction of number in eight successive classes during the four years between entrance and graduation, beginning with the class which entered in 1869 and graduated in 1873. The reduction exhibited was the excess of the number of persons who, from all causes, left each class during the four years of its course over the number of persons admitted to the same class with advanced standing. It appeared from this table that this reduction in number had been considerably larger since the year 1874–75 than it was before, and that in the classes of 1875 to 1880 inclusive it amounted, on the average, to 26.7 per cent. During the past year the College Faculty, at the instance of the Corporation, made a new and thorough examination of this subject, and, through their Dean, presented to the Corporation an exhaustive report upon it. Instead of studying the net loss of each class during four years, they studied the gross loss of the whole College each year, thus eliminating from the results the variable number of admissions to advanced standing. They then discriminated between losses from failure in scholarship and losses from other causes, and finally corrected the apparent annual losses from failure in scholarship by deducting the cases of subsequent restoration to College or subsequent graduation. The table on the next page, which is taken from the report sent to the Corporation, exhibits the results of their inquiries. This table does not disclose any tendency to a progressive increase of total annual loss, although the annual loss has been on the average greater since the year 1874–75 than it was before. The losses by failure in scholarship, which make less than one half of the whole, show little tendency to increase, if comparison is made with the average of the whole period, and no tendency whatever to increase since

College Year.	No. of Students Oct. 1.	Percentage of losses from all causes.	Percentage of losses		Net loss by failure of scholarship, deducting those afterwards graduated or now in College.
			from failure in scholarship.	from other causes.	
1870–71	608	7.	3.1	3.8	2.5
1871–72	621	10.	5.2	4.8	4.8
1872–73	636	6.8	3.	3.8	2.4
1873–74	706	8.2	5.2	3.	4.8
1874–75	716	12.5	6.	6.5	4.7
1875–76	776	10.	5.4	4.6	4.6
1876–77	823	13.4	6.	7.4	4.7
1877–78	813	12.4	5.	7.4	3.9
1878–79	819	11.8	4.5	7.3	3.7
1879–80	813	10.2	6.2	4.	4.9

1874–75. Finally, the net losses by failure in scholarship recorded in the last column of the table exhibit no tendency to increase since the year 1873–74, but are, on the contrary, remarkably uniform. The Faculty are of opinion that the increased percentages of gross annual loss between 1874 and 1879 were due to the general commercial depression. During the years which are covered by this inquiry many changes have been made in the College regulations, — some giving greater freedom to the student, and others making greater demands upon him, — and it is obviously important that the governing boards and the University public should get a just view of the resultant effect of these changes upon the number of failures in the College career through lack of scholarship. For the past seven years the annual number of these failures has been, on the average, four and one half per cent of the whole number of students. This small percentage would, of course, be sensibly larger were it not for the stringency of the admission-examination, at which about fifteen per cent of the candidates are annually rejected.

In January last the Corporation, guided by the advice of the College Faculty, and acting in the light of the experience gained at Cincinnati and Chicago during the past five years, decided that the June examinations for admission to the College, Scientific School, Law School, and Medical School should be simultaneously conducted at Cambridge, Exeter, N. H., New York, Philadelphia, Chicago, Cincinnati, and San Francisco, and that every person examined for admission to the College at any place other than Cambridge should pay in advance a fee of five dollars, — the whole fee of a candidate who divides his examination between two years being payable in the year when he begins his examination. Examinations were accordingly held at all the above-named places in June last. A College officer is sent to each place at which an examination is conducted, to give advice to candidates, oversee the whole examination in all its details, and confer with the friends of the University and the friends and teachers of future candidates. The whole examination is conducted in writing from printed questions, which are brought from Cambridge and are identical at all the different localities. The papers written by the candidates are sent immediately to Cambridge, and are there passed upon by the same set of examiners who pass upon the papers of the candidates presenting themselves in Cambridge. The result of his examination is made known to each candidate by mail. The system is very simple, and its results are wholly satisfactory. Although the examinations of last June at places other than Cambridge were held at very short notice, — only about four months, — they seem to have caused an immediate increase in the number of students from New York, New Jersey, Pennsylvania, Ohio, Kentucky, Illinois, and California. The whole cost of these examinations to the University, not including advertising, was $742.66, and the receipts from the candidates were $500. The receipts may not be so large another year, because all the candidates paid the fee last June, whereas hereafter only those who present themselves for the first time will have the fee to pay; but the net annual cost of the examinations will probably not exceed $500. It would have cost the candidates examined last June elsewhere than in Cambridge at least $7,000 to come to Cambridge for the purpose; and only by making two journeys to Cambridge could they have secured the advantages of passing the preliminary examination in one year and of presenting themselves in June of another year to complete their examinations. The strong argument in favor of conducting the admission-examinations at several convenient centres distributed over the country, in addition to the argument of economy, is that the practice will help to make the resort of students to this University measurably representative of all parts of the country. There is no reason why other universities, Western as well as Eastern, should not adopt the same policy to their own advantage and that of the country. Indeed, Yale College, the College of New Jersey, and Vassar College have already done so, though with some diversities of method. The system might readily be extended considerably; for with the existing means of communication by telegraph, mail, and express, it is nearly as easy to conduct an examination at a given time in twenty places as in one. If colleges having requisitions for admission which are identical in whole or in part would unite in conducting common examinations at many different centres, the convenience of preparatory schools and of the public would be greatly promoted, and an increasing number of young men would be year by year gathered from all parts of the country into institutions of national resort wherever situated.

After the Christmas recess in the year 1880–81, Professors Lane and Goodwin took part for a time in the instruction of the advanced sections of the Freshman class in Latin and Greek, and, to relieve those professors from any necessity of repeating their lectures, two sections of the class were united once a week to form one section of nearly one hundred persons. The experiment was entirely successful, and proved that there were great advantages in bringing the senior professors into contact with the best students of the class, and in replacing a part of the drill, which required small sections, by instruction which could be given to large numbers at once. Professor Byerly had for several years dealt successfully with large divisions of the Freshman class in the subjects of trigonometry and analytic geometry. The whole class had listened with profit to lectures on chemistry by Professor Cooke, and the class, divided into two large sections, had attended lectures on Greek literature by Mr. Dyer, and on Latin literature by Mr. Gould. These favorable results pointed the way to a rearrangement of the work of the Freshman year which would secure the advantages above mentioned, and also remedy a serious evil of long standing, — an evil which affected primarily the tutors and other instructors of the Freshmen. The Faculty had long regretted that any instructor should be confined to the work of the Freshman year, which is elementary, prescribed, and often repeated; and the instructors themselves had been very desirous of getting the variety and stimulus which some elective, and therefore more advanced and interesting, work would give them. In May last the work of the ensuing Freshman year was recast in such a way as to bring in for several months professors of Latin, Greek, Mathematics, and German as instructors, to reduce the number of sections on the average, to replace drill by instruction to a certain extent, and to give every instructor of Freshmen some elective work with higher classes. It was also found possible to assign to Professor A. S. Hill a share of the instruction given to Sophomores in prescribed rhetoric. These happy changes went into effect at the beginning of the current year, and will doubtless prepare the way for a completer transformation.

The College lived quietly during 1880–81 under the revised regulations which the Faculty adopted in 1879–80, at the close of a period of debate and transition which had lasted ten years. The new regulations worked well, and no proposition was made to amend them. The experience of the year confirms the opinion expressed in the last Report, that the regulations are likely to remain for a considerable time without fundamental alteration.

The Dean of the College Faculty, in his report subjoined, again presents an interesting and instructive statement of the development and working of the elective system. It is to be inferred from his account of the actual experience of the College during a period of ten years that the system does not tend to bring about the extinction of the traditional studies called liberal; because these studies, though pursued by a smaller proportion of the students than formerly, are pursued by those who choose them with greater vigor and to better purpose than they were ever pursued as parts of a prescribed curriculum. The tables of the Dean's report also indicate that the scientific turn of mind is comparatively rare among the young men who enter the College, a large majority of the students preferring languages, metaphysics, history, and political science, to mathematics, physics, zoölogy, and botany. Whether this preference is the result of genuine natural predisposition, or an effect of the training supplied by the secondary schools, it would be hard to determine. Finally, whoever reads the history of the development of the elective system, as it is recorded in the successive annual reports of the Dean of the College Faculty since 1870, will arrive at the well-grounded conviction that every extension of the system has been a gain to the individual student, to the College, and to every interest of education and learning; and will also see reason to believe that the time is not far distant when the few subjects still prescribed for all students will in their turn become elective.

Near the close of the year the Parkman Professorship of Theology was filled by the election of Rev. Francis

Greenwood Peabody, who had been serving during the year with great acceptance as Lecturer on Ethics and Homiletics. Mr. Peabody brings to the professorship an unusually prolonged training in theology and ethics, successful experience in preaching, and a strong interest in teaching.

It was the new endowment of $140,000, begun in the spring of 1879 and completed in the autumn of 1880, which enabled the Corporation to fill the Parkman Professorship, and prevented the School from falling into serious pecuniary embarrassment, as the rate of interest earned upon its funds, and the income from the Bussey real estate, fell year after year. The School lives almost exclusively upon the income of its endowments; thus, in 1880–81 the tuition-fees paid by regular students did not exceed $800 in amount, and during the current year the amount of these fees is not greater. A rule that no person should be admitted as a regular student unless he were already a Bachelor of Arts could therefore be adopted by the Divinity School with small pecuniary sacrifice; for more than half of its regular students are ordinarily Bachelors. Special students might, of course, continue to be admitted without any such restriction. The young graduate in theology, unlike the young lawyer or physician, bursts at once into full professional activity. There is the more reason for insisting that he should be a person of maturity of mind and character as well as of thorough and ample training, and for framing the rules of a university school of theology in the way best adapted to secure this end.

In the last Report the urgent need of a new building for the Law School was briefly stated, and within a few weeks a friend of the University, whose name is to be withheld for the present, informed the President that he desired to supply the need, and was prepared to devote $100,000 to the purpose. The Corporation immediately began to seek for a suitable site for the projected building, and after much consideration, consultation with the professors of the School and other persons interested, and some negotiations with persons who had desirable sites for sale, decided to place the new building on the northerly side of Holmes Place. To this end it became necessary to buy 33,380 feet of land, known as the Royal Morse estate, which had a narrow frontage on Holmes Place, and on all other sides adjoined land already belonging to the Corporation. This purchase was effected at a fair price, and a very satisfactory site as regards aspect, and security against dust, noise, and fire was thus secured. The plans of the building have been studied with great care, and upon the opening of the coming spring the construction of the building will be begun.

Another pressing want of the Law School remains unsupplied, and is affecting unfavorably the development of the School. Experience has shown during the past two years that four professors, with the aid of an instructor in torts, cannot give the amount and variety of instruction which are needed to make the three years' course as attractive and useful as possible. The income of the school from its tuition-fees and its small endowment is barely sufficient to meet its expenditures upon the present footing; so that the appointment of a fifth professor is impossible without an increase of resources. These are the horns of the dilemma: to improve the School and so increase the amount of the tuition-fees a fifth professor is needed; to enable the School to employ a fifth professor more tuition-fees, or other new resources, are needed. The best solution of the difficulty is the adequate endowment of a new professorship. Surely the Harvard Law School has deserved well enough of the community and the profession to count with confidence upon soon receiving this addition to its means of usefulness.

The site for the new building of the Medical School at the southeastern corner of Boylston and Exeter streets, Boston, was bought in April, 1880; but some abortive negotiations about another site, which the majority of the Medical Faculty would have preferred, had it been obtainable, put off the preparation of plans for the building until the following autumn. In November, 1880, the preparation of the plans was intrusted to Messrs. Ware and Van-Brunt, and a large committee of the Faculty was appointed to give advice as to the size and internal arrangement of the building, and the fittings which its peculiar destination would call for. The desire of the Corporation and the patient endeavor of the architects were to devise a building adapted in every respect, within and without, to its probable uses, so far as they could be foreseen; and the committee of the Faculty spared no pains in studying these uses, and devising the best means of providing for them with all practicable convenience and completeness. As four fifths of the building were to be taken up by the laboratories and lecture-rooms devoted to the departments of anatomy, physiology, histology, chemistry, and surgery, the requirements in regard to light, heat, and fresh air were unusually stringent, and the provision of flues, drains, and fittings for water, gas, and steam was elaborate and peculiar. It was further necessary that the exterior of the building should be not unsuitable to the handsome quarter of the city in which it was to be placed, and that throughout the structure every precaution should be taken against fire. Under these circumstances it was not surprising to find, when the plans and estimates were completed after six months' labor, that the cost of the building would not be less than $190,000. After paying $83,325 for the site, there remained of the money raised by subscription in 1874–75, with its accumulations, a little less than $90,000. In this state of things, the Medical Faculty, moved by the hopefulness of a few of their number, resolved that an effort should be made to raise another considerable sum by subscription, and in three weeks two members of the Faculty, almost unaided, procured the subscription of $103,720. Work was begun upon the building early in June last, and it is hoped that the whole building will be ready for occupation by the first of January, 1883.

The next thing which needs to be done for the Medical School is to procure scholarship funds and endowments for its professorships, or a large permanent fund, the income of which shall be applicable to salaries. So long as medical schools are conducted as private ventures for the benefit of a few physicians and surgeons who have united to form a corporation or a faculty, the community ought not to endow them; for it is contrary to the best interests of the public that medical education should be conducted in that way. The experience of the past hundred years in this country proves that such medical schools will not be endowed. While several millions of dollars are yearly devoted to education in arts and in theology by intelligent and public-spirited men and women, hardly anything is given for education in medicine; because almost all American medical schools are organized and carried on as commercial adventures. In 1871 the Harvard Medical School ceased to be in any sense a private venture, and became a constituent department of the University, devoted, like the other departments, to the advancement of science and learning, and to the amelioration of the conditions of human life. Since that year it has received by gift and bequest $270,000; but this sum, though considerable, is not one third of the endowment which it urgently needs. The objects of endowment in medical education are precisely the same as in other departments of education, namely, to provide permanent means of securing the most competent persons for its professorial chairs, of helping poor students of rare capacity, and of advancing knowledge by new researches. It is the primary object of medical science and art to defend and improve the life that now is, — the life of the individual, of the family, and of society; but since it is impossible to separate physical from mental and moral well-being, the domain of medical science is really co-extensive with human nature. Whatever motives influence benevolent persons to endow institutions which teach the humanities or theology should also avail for the endowment of medical education. The seed and the fruit, the planting and the harvesting, may be different in kind; but these various cultures all have in view a common end, namely, the improvement of man's high estate.

The Dental School continues to send out year by year a few well-instructed dentists, but is quite unable to pay its professors and instructors any salaries. The attempt made during the year to raise the sum of $30,000 for the School did not succeed; but last summer a number of the graduates, who are all men still young, subscribed $1,900 for its benefit, most of the subscriptions being payable in five annual instalments. This evidence of affection and confidence on the part of the men who best know what the School has been, is, and ought to be, was peculiarly welcome to the Corporation and Faculty. There is, undoubtedly, some difference of opinion among dentists as to the nature and extent of the training which a young man who means to be a dentist should receive. Some dentists maintain that a dentist, like an oculist, is a physician with a specialty, and that nothing short of the full course for the degree of Doctor of Medicine can be satisfactory; others say that a dentist is simply a fine mechanic, and that there is little use of any training except that of the eye and hand. The Dental School occupies an intermediate position, which satisfies neither of these extreme parties. It should, perhaps, be considered by those who maintain that the dentist should receive the same long and costly training as the physician, that a dentist cannot work so many hours a day, so many days in the year, or so many years, as a physician; and that the dentist also differs from the surgeon, oculist, or other specialist in medicine, in that he is not called upon to take such grave responsibilities, and therefore does not have opportunities for charging large fees; in short, that the dentist's occupation does not promise, on the average, so good an income for so long a time as the physician's, and therefore will not justify so costly a preparation. On the other hand, it must not be forgotten that every dentist needs to know something of chemistry, physiology, histology, and anatomy, and that coarse and ignorant men, however good mechanics they may be, are not suited for a calling which is supported chiefly by the better educated part of the community. As a mere question of university organization, a separate Dental School, or a Dental Faculty distinct from the Medical Faculty, is by no means indispensable to the maintenance of thorough instruction in dentistry, and the conferring of a dental degree. The same instruction which is now provided might be given under the direction of the Medical Faculty, and the degree of D.M.D. still be conferred upon conditions very similar to those which now obtain.

In the last Report an irregularity was pointed out which, though not very harmful, still required correction, — the irregularity, namely, that persons entered the Scientific School as special students for no other reason than to gain admittance without examination to College classes, under the general rule that a member of one department of the University, who pays the full fee of $150 a year, may take any courses of instruction in any other department which he is found competent to pursue, except special laboratory courses. This irregularity has been corrected by making a change in the rules concerning special, or unmatriculated, students in the College. From 1876–77 to 1880–81 inclusive a few persons had been each year admitted to the College without examination, to pursue any studies, at choice, for which they were found competent. These persons were not candidates for a degree, and were classed as unmatriculated students; but no person was thus admitted who was less than twenty-one years of age. The College Faculty last year repealed this restriction as to age; so that the College, like every other department except the Medical School, now stands open, without any barriers in the form of admission-requisitions, to all special students who are not candidates for any degree. The immediate effect of this change of rule was that the number of unmatriculated students in the College rose from 15 in 1880–81 to 34 in 1881–82, while the number of special students in the Scientific School fell from 26 in 1880–81 to 17 in 1881–82.

It has been noticeable for several years past that about one half of the regular students in the Scientific School pursue the four years' course in natural history. The facilities offered by the School to students of natural science are ample, and the amount and variety of the instruction given are great; but the course does not lead to any well-defined career, so that the number of students who pursue it must necessarily be small. Very few secondary schools employ any special teacher of natural science, — to their shame be it said. For competent teachers of Greek, Latin, and elementary mathematics there is a large and steady demand, but for well-trained teachers of botany, zoölogy, chemistry, and physics, as for teachers of English and history, the demand is very small and uncertain. The graduates in engineering have of late been few in number, but they have been thoroughly taught, and have promptly found appropriate employment.

By the munificence of Mrs. Samuel Hooper, the fund of the Sturgis-Hooper Professorship of Geology was increased, March 30, 1881, by the sum of $30,000, so that it now amounts to $100,000. The income of the fund is to be paid to the professor as salary up to $5,000, and the excess of the income, if any, over that sum is to be appropriated for the expenses of the department under the direction of the professor. In the following June the Corporation received from Professor J. D. Whitney a proposition to give to the President and Fellows, for the use of the Sturgis-Hooper Professorship, his geological and geographical library and collections (other than mineralogical) upon the conditions: (1) That the full salary of the Professorship be paid to him during his life; (2) that the Faculty of the Museum of Comparative Zoölogy provide the necessary rooms for the use of the said professor, and for his collections and library; and (3) that Professor Whitney's successors be appointed upon nominations made by the said Faculty. In the following July the Corporation voted that they should accept Professor Whitney's library and collections upon the terms proposed.

During the year 1880–81 the subscription towards a new endowment for the Botanic Garden was increased by about $20,000, making the whole amount thus far secured $42,265. The estimates made by the Director in 1879 led him to the conclusion that the sum needed in order to put the Garden upon a firm footing was $80,000, and it is certain that these estimates were not too high. Since the opening of the present year the will of the late John A. Lowell, a constant supporter and friend of the Garden, has been found to contain a bequest in its favor, to make permanent the annual gift of $1,000, which Mr. Lowell, in his lifetime, was in the habit of sending anonymously to the Treasurer. The income of this bequest will not, however, be a new resource.

The herbarium and library make such important parts of the botanical establishment which is situated at the Garden, that it has been thought proper to include in the annual report of the Director a report on the progress of the herbarium and library by the Curator and Librarian.

The net income of the Bussey Trust Fund was no better in 1880–81 than in 1879–80; but the instruction given in the Bussey Institution was all maintained. Mr. Edward Burgess again gave to the School his valuable services as Instructor in Entomology. The School exhibits this phenomenon: Six competent teachers give instruction in the branches of science on which agriculture and horticulture depend, and in the arts of farming and gardening; the tuition-fee is remitted, in accordance with the directions in the founder's will, to any student who is unable to pay it; the School is well supplied with the appliances and collections necessary to give all its students practice in horticulture, indoors and out, laboratory work in chemistry, botany, entomology, and the anatomy and physiology of domestic animals, and field-work in botany and entomology; the students of the School have also the right to attend any courses of instruction given in other departments of the University which they are competent to pursue; and the result is, that the School has on the average about six students a year. The publication of the Bulletin has been suspended for lack of money to pay the expenses of researches and the cost of printing. It does not seem probable that the real estate in which the Bussey Fund must be kept invested, under the will of Mr. Bussey, will again yield within any assignable period the net income in reliance upon which the Bussey Institution was opened in 1871.* Sooner or later it will be necessary, in the interest of the Law School, Divinity School, and Bussey Institution, to apply to the Legislature for permission to sell certain detached parcels of land belonging to the Trust which now yield no income, and perhaps some of the remoter portions of the estate at West Roxbury. The Fund is charged with annuities to the amount of $6,800 a year.

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* From $33,000 to $35,500 a year, of which one half went to the Bussey Institution, one fourth to the Law School, and one fourth to the Divinity School.

Pending the decision of the city of Boston on the question of making a contract with the University for the use of the Arnold Arboretum as a part of the system of public parks, the Director of the Arboretum has not attempted to do any work except to care for and increase the plantations where they now stand in the reserved grounds of the Bussey Institution, and to keep up the exchanges with other institutions. The special herbarium and museum connected with the Arboretum have been much increased in size and value under the care of Mr. Robinson.

The chief events of the year in the Library were the conversion of the Library Bulletin into a Bulletin of the University; the adoption of a system of ordering through the Library all books to be bought for any department of the University except the Law School, and of cataloguing at the Library all books received by any department; the improvement of the vaulted cellar of the original Gore Hall so as to gain at moderate expense a large and dry store-room for bound newspapers and duplicates; the opening of the Library on Sunday afternoons; the issue of the University Calendar; and the receipt of the books bequeathed to the President and Fellows by the late Thomas Carlyle (see Appendix III.). The subjoined report of the Librarian deals with all these matters in detail, and also exhibits the number of books and pamphlets added during the year to the various collections which make up the University Library, shows that the use of books in Gore Hall is increasing, and describes the progress made in the rearrangement of the Library, and in the catalogues.

Unless means can shortly be found to reconstruct the interior of the main hall, which is now used as the reading-room, the work of classifying and arranging the books by subjects in the new stack will have to be suspended; for a large space in the stack is now occupied by books which are to be restored to the original building. The Corporation hold one fund which can ultimately be devoted to the reconstruction of the interior of Gore Hall, namely, the Gore Annuity Fund, which amounted, August 31, 1881, to $20,776.07. From this fund the recent improvements in the basement of the building were paid for.

The force employed in the catalogue department proper has been reduced, rather than increased, of late years, and is hardly able to do more than catalogue the new books and pamphlets received and to correct the two catalogues (of authors and subjects) as the revision of the subject-catalogue and the rearrangement of the books in the new stack proceed. There is a considerable mass of books in the Library which have never been catalogued upon the short cards; and the present force is not large enough to attack this mass with any hope of rapid progress. As the card catalogues increase in bulk, it becomes very plain that a catalogue made of printed slips attached to the pages of a bound scrap-book in such a way that they could be easily shifted would be much more compact and convenient.

The second of the Bibliographical Contributions issued by the Library during the year was a list of the publications of Harvard University and its officers during the ten years from 1870 to 1880. This list exhibits the number, scope, and volume of the official publications of the University, and the productiveness of its officers of instruction and government in the various fields of literature and science. The President invites the attention of the Board of Overseers and of all the graduates and friends of the University to this significant list.

The subscription of 1878, which gave to the Observatory $5,000 a year for five years, has thus far been very economically and profitably employed. The staff included during the past year ten men and six women; all the principal instruments were in active use; good progress was made in the reduction of the observations; and Volume XIII. of the Annals will shortly be issued. The subjoined report of the Director gives an interesting description of the various work accomplished during the year, and conveys a vivid picture of scientific research planned with intelligence and prosecuted with enthusiasm. In two years more the subscription of 1878 will be exhausted; and it is for the friends of the Observatory to consider, well in advance of the actual need, how the activity of the establishment is to be maintained.

The large addition to the Museum which the Curator is building at his own expense was finished externally, and the grounds surrounding it were graded, during the year 1880–81; but the interior will not be finished before January, 1883. There is great advantage, in a building which is to be filled with tight cases and drawers for the exhibition and storage of apparatus, models, or specimens, in letting the brick walls stand at least six months after the roof is made tight before they are plastered, and in allowing a similar interval to intervene between the finishing of the plastering and the putting in of the woodwork.

The publications of the Museum for the year 1880-81 greatly exceed in bulk and value those of any previous year, and include important researches in physical geography, geology, and zoölogy. Two valuable collections of invertebrate palaeozoic fossils have been bought during the year; and two experienced collectors were engaged during the open season in collecting fossil vertebrates and cretaceous plants for the Museum at some of the rich localities of Western Kansas. It is the purpose of the Curator to make the Museum as rich in geological material as in zoölogical, and the year 1880–81 saw good progress made in this direction.

When the northwestern corner block of the building is ready for occupancy, the number of exhibition-rooms open to the public will be rapidly and considerably increased. The plans to this end were made long since, and much of the preparatory work has already been done.

Last spring it was made known to the Corporation through Mr. Alexander Agassiz that a friend of the University stood ready to build a physical laboratory at a cost of $115,000, provided that a permanent fund of $75,000 were raised, the income of which should be appropriated to the running expenses of the laboratory. This munificent offer the Corporation were, of course, eager to accept, and they at once set on foot a subscription for the current expense fund, on the procuring of which the principal gift was conditioned. To the present time only $30,000 have been subscribed toward that fund. The offer is still open, but the Corporation, not knowing how long it will remain so, are very anxious to further that subscription.

In studying the question of sites for two large buildings — the Law School and the proposed physical laboratory — the Corporation were impressed with the fact that the University may best extend itself northward from Kirkland Street and Holmes Place. It already owns land in that direction quite equal in area to the College Yard, and the acquisition of certain parcels needed to make the shape and boundaries of its territory satisfactory will be facilitated by the fact that the part of Cambridge which lies not north but west of the College is already considered the most desirable for private residences.

Sever Hall was occupied at the beginning of the year, and the whole College — teachers and students — entered with great satisfaction upon the enjoyment of this munificent gift. Before the building was finished and furnished the unrestricted Sever Fund of $20,000 was drawn upon to the extent of $11,000; but if the whole of that fund had been spent upon the monumental building which bears the Sever name, the use of the fund could not have been considered other than appropriate. As the public ✓ finds it hard to understand how an institution which receives such great gifts as the Hemenway Gymnasium and Sever Hall can be constantly embarrassed for lack of money, it may be instructive to mention that the cost of carrying on the Gymnasium in 1880-81, including the salary of the Director, was $4,843.11, and the expenses for the year in Sever Hall, with no allowance made for insurance or repairs, amounted to $2,347.20. In other words, these two most useful and desirable gifts have involved the Corporation in a new annual expenditure representing the income of about $140,000; but this new principal the Corporation have not had the good fortune to obtain.

In the first four months of 1881, G. Stanley Hall, Ph.D., University Lecturer on Pedagogy for the year 1880–81, gave a course of twelve lectures on Saturday mornings at Wesleyan Hall, Boston, to an audience composed chiefly of teachers. The action of the University in directing attention to the philosophy of teaching, and in causing Dr. Hall's lectures to be delivered at a time and place convenient for the teachers of Boston and the vicinity, was received with favor by many persons interested in the subject, and the Corporation received, at the close of the course, the public thanks of the teachers who had attended it.

In April last, Henry L. Higginson, Esq., made an offer to the Corporation to provide, without cost to the College, a series of six orchestral concerts in Sanders Theatre during the winter of 1881–82, at a price not to exceed fifty cents for the single admission. The Corporation gladly accepted this generous offer, and placed Sanders Theatre at Mr. Higginson's disposal on such days as he should select. These concerts have already begun; they cultivate the taste for good music, and bring an exquisite enjoyment within the reach of slender purses.

In May, 1881, the Oedipus Tyrannus of Sophocles was performed in Greek in Sanders Theatre by students of the University, with the aid of one of the instructors in elocution. To the preparations for this performance the most assiduous labor was given during several months by the professors connected with the departments of Greek and Music, the actors, and the singers. New music of modern form was composed for the choruses of Sophocles, and was sung with orchestral accompaniment by a chorus of fifteen students, assisted by a supplementary chorus composed chiefly of graduates. The costumes, scenery, and appointments were all carefully studied. The actual performance, thus conscientiously prepared, was dignified, impressive, and memorable. Six thousand persons witnessed the five performances with grave interest and delight.

The financial condition of the College proper gives much concern to the Corporation. The withdrawal of nearly $100,000 from the free capital in 1875–76, to pay for the extension of Gore Hall, the fall in the rate of interest on its invested funds (two per cent in seven years), and the heavy additional expenses which it has been yearly obliged to incur, taken in connection with the cessation since 1876–77 of the former rapid increase in the number of students, have occasioned three deficits within the past four years. These three deficits have taken from the free capital of the College nearly $50,000. To be sure, no such loss would appear if the total capital of the College on September 1, 1877, were compared with the total capital on September 1, 1881; because in that interval new gifts of unrestricted funds have been received to an amount somewhat greater than $50,000; but it remains strictly true, nevertheless, that the College has been living beyond its income for four years, to the average amount of $12,500 a year. The deficit for 1880–81, amounting to $34,469.19, is the largest which the College has ever incurred, and has forced the Corporation to consider anxiously the measures necessary to prevent the recurrence of such a reduction of capital. After deducting from the deficit all those expenses of the year which can properly be called extraordinary, there remains an excess of current expenses over receipts to the amount of at least $15,000. Since the beginning of the current year a gift of $100,000, derived from the estate of the late Eben Wright, has been received from T. Jefferson Coolidge, Esq., who has directed that the income go towards the cost of administration and service in the Library. As the College bears the whole cost of carrying on the Library, this most timely gift will relieve the College by the whole amount of the income to be derived from it, namely, by $4,000 a year from January 1, 1882. The Corporation will this year cut off certain expenses in the Library of recent origin, and charge their just proportion of the expenses of the Gymnasium and of clerk hire in the Bursar's office to the Divinity, Law, and Scientific Schools; and next year will in addition charge special fees for supplies to all students who work in laboratories, and abolish a few unimportant courses of instruction, the loss of which, they believe, will not be seriously felt. They see some reason to believe, moreover, that the number of students will next year increase. It will, however, be impossible to avoid a large deficit for the current year.

While the Corporation feel it to be their duty to prevent, if possible, the recurrence of large deficits, they wish to inform the alumni and friends of the College that the expenditures which have caused the deficits of the past four years were, in their judgment, expedient and in some sense necessary, and that reduction of the present scale of expenditure cannot be effected without loss and injury to the institution. To prevent such reduction, new funds would be needed to a total amount not less than $250,000, the income of which should be applicable to the salaries of teachers or administrative officers, to the cost of administration and service in the Gymnasium, Chapel, or Library, or to the general expenses of the College. The Class Subscription Fund is just such a fund, and the Corporation observe with regret that subscriptions to that fund have of late years slackened. The last instalment of $20,000 was paid to the Treasurer in 1878, and the contributions of the graduating classes have fallen off very much since 1877.[*]

Very few of the colleges and universities of the United States publish annual reports of their doings and their condition, although the practice is growing in favor. They might very properly be compelled to publish annual financial statements, by a modification in the laws concerning exemption from taxation, — a modification which is for other reasons desirable. It would be a great improvement in the legislation concerning exemption, if no church, school, college, asylum, or hospital could claim exemption unless it deposited with the proper State official every year an intelligible statement in print of its financial transactions and of the nature and condition of its property. The ground upon which any institution is exempted from taxation is that it is doing work of public utility. Now, there is no work of genuine public utility which will not be furthered by complete publicity; so that the State, by insisting on annual returns from exempted institutions, would

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[*] Class of	1877	subscribed	$5,035.	No. of subscribers,	92.
" "	1878	"	1,630.	" "	80.
" "	1879	"	3,425.	" "	70.
" "	1880	"	2,620.	" "	57.
" "	1881	"	855.	" "	17.

do nothing but good to institutions which ought to be exempted.

The usual information concerning the number of students, and the honors, prizes, and degrees given in 1880–81, together with a list of the examining committees appointed for that year by the Board of Overseers, will be found in the Appendix (V.–VIII.). The attention of the Overseers is respectfully invited to the following Reports from the Deans of the several Faculties, the Secretary of the Academic Council, the Librarian, the Directors of the Botanic Garden, Arnold Arboretum, and Observatory, and the Curator of the Museum of Comparative Zoölogy.

CHARLES W. ELIOT, *President*.

CAMBRIDGE, Jan. 4, 1882.

REPORTS

OF THE

DEANS OF THE FACULTIES, THE SECRETARY OF THE ACADEMIC COUNCIL, THE LIBRARIAN, THE DIRECTORS OF THE BOTANIC GARDEN, THE ARNOLD ARBORETUM, AND THE OBSERVATORY, AND THE CURATOR OF THE MUSEUM OF COMPARATIVE ZOÖLOGY.

To the President of the University:

Sir, — As Dean of the College Faculty, I have the honor to present the following report upon the administration of Harvard College during the academic year 1880–81.

The number of undergraduates at the beginning of the year was eight hundred and twenty-nine. The changes of all kinds in the composition of the College classes, from October, 1880, to October, 1881, were as follows: —

Present Oct., 1880.		Left the Class.	Admitted Oct., 1881.	Present Oct., 1881.	
Seniors	196	Class Graduated.	. .		. .
Juniors	186	12	8	Seniors	182
Sophomores	204	14	17	Juniors	207
Freshmen	243	38	12	Sophomores	217
	829		New Class.	Freshmen	217
					823

Of the whole number of students set down as having left their classes, twenty-nine either withdrew or were removed from College, or were dropped to some lower class, in consequence of an unprofitable use of their time; eight students withdrew by reason of ill-health; and four were advanced to higher classes at the end of the year, under exceptional circumstances. Two deaths occurred, one by drowning in the Christmas recess, and the other by typhoid fever near the end of the last summer vacation.

The tables given on pages 46–51 show the names of the instructors in charge of the various courses of study, the number of students in attendance upon each at the beginning of May, the number of sections in each course, and the number of hours of attendance per week, both for student and instructor. The table does not include the courses established for graduates, as these courses are under the supervision of the Academic Council and not of the College Faculty. The table also fails to include many cases where courses are pursued by students as extra studies, and with a degree of regularity which deserves notice, although no responsibility exists for the performance of the work.

Instruction was given in Elocution to seventy-seven Seniors, sixty-five Juniors, and fifty-two Sophomores by Mr. Riddle and Mr. Ticknor, and to seventy-five Freshmen by Mr. Sargent. One exercise with the instructor for fifteen minutes was given weekly to each of the Seniors and Juniors; the Sophomores met the instructors in four sections, having weekly exercises of one hour, and the same method was pursued with the Freshmen. The attendance of all these students was entirely voluntary and only the necessary limit of the time of the instructors prevented a larger number from availing themselves of the instruction.

At the close of the last year the Faculty were required to enforce, for the first time, the regulation whereby no student found to be deficient in studies amounting to more than seven hours of recitation per week can be advanced to the next higher class. Under this regulation three of the Juniors of 1880–81 failed to become Seniors and are still Juniors; four Sophomores failed in like manner, and eleven Freshmen. To these must be added seven Freshmen who were required to leave College before the end of the year in consequence of incorrigible neglect on their part. The number of students thus removed from their classes for deficient scholarship, for the last eight years, is as follows: —

	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.
Removed to lower classes . .	18	19	28	17	25	14	22	18
Withdrawn during the year .	10	13	8	16	4	11	4	7
Total	23	32	36	33	29	25	26	25
Whole number of students.	706	716	776	823	818	819	813	829

PRESCRIBED STUDIES.

Instructors.	Subjects.	Text-Books.	No. of Students.	No. of Sections.	Hours per week for Students.	Hours per week for Instructors.
		FRESHMEN.				
Prof Goodwin and Messrs. Dyer, L. B. R. Briggs, Wheeler, and Phillips	Greek	[*Maximum Sections.*] — Lysias (Five Orations). — Plato (Apology and Crito). — Homer (Odyssey, Books I.-XII. or Iliad, Selections, as preferred).—Sidgwick's Greek Prose Composition, Part I. Translation at Sight. — Lectures on Greek Literature. — Goodwin's Greek Moods and Tenses	75	6	3	18
		[*Advanced Sections.*] — In addition to the above, Aristophanes (The Clouds)	105	2	3	6
		[*Minimum Section.*] Herodotus and Thucydides (Selections in Goodwin's Greek Reader). — Homer (Iliad, Books IV.-IX.). — Translation at sight. — Composition. Goodwin's Greek Moods and Tenses. — Selections from Grote's History of Greece	39	1	3	3
Prof. Lane and Messrs Gould, Wheeler, and Phillips	Latin	[*Maximum Sections.*] — Livy (Books XXI.-XXII.). — Horace (Odes and Epodes). — Cicero (Walford's Extracts, Part I. in connection with Composition). — Translation at sight. — Latin Prose Composition. — Selections from Mommsen's History of Rome	88	6	3	18
		[*Advanced Sections.*] — In addition to the above, the Mostellaria of Plautus	115	2	3	6
		[*Minimum Section.*] — The same authors as above, but in smaller quantities. — Translation at sight. — Latin Prose Composition	15, 1 Sc.	1	3	3
Messrs. Sheldon and Lutz	German	Sheldon's Grammar. — Translation from German into English and English into German	173	8	3	24
Prof. Jacquinot	French	Brachet (Petite Grammaire Française). — Bôcher's Reader. — A. Achard (Le Clos Pommier). — Feuillet (Roman d'un jeune homme pauvre)	24, 3 Sc.	1	3	3
Profs. C. J. White and Byerly, and Mr. G. R. Briggs	Mathematics	[*Maximum Section.*] Algebra (Todhunter, chapters I. — XXXVI., XLVI., LIII.). — Analytic Geometry (Lectures)	34, 5 So.	1	7 in two weeks.	7 in two weeks.
		[*Minimum Sections.*] — Algebra (as above). — Chauvenet's Solid Geometry. — Wheeler's Plane Trigonometry. — Analytic Geometry (Lectures)	188	8	7 in two weeks.	28
Mr. Willson and Mr. N. D. C. Hodges	Physics	[*Maximum Section.*] — Tait's Recent Advances in Physical Science. — Maxwell's Theory of Heat, omitting chapters X.-XVIII. inclusive	34	1	2	2
		[*Minimum Sections.*] — Ganot's Physics, Books I.-IV., and Book VII., chapters I.-VI.	184	6	2	12
Prof. Cooke	Chemistry	Elementary Chemistry (Twenty Lectures)	211	1	1 after Christmas.	1 after Christmas.
		SOPHOMORES.				
Messrs Drennan and Wendell	Rhetoric	Hill's Principles of Rhetoric. — Exercises in Writing and Criticism	182, 5 Fr.	4	2	8
Messrs. Drennan, Perry, and Wendell	Themes	Six Themes, corrected and rewritten	203			

		JUNIORS.				
Prof. A. S. Hill and Mr. Perry	Themes	Six Themes, corrected and rewritten	180			
Dr. Snow	Forensics	Four Forensics Theses substituted for Forensics, as allowed by the rules, by	159 15			
		SENIORS.				
Prof. Peabody	Forensics	Four Forensics Written work substituted for one or more Forensics, as allowed by the rules, by	141 56			

ELECTIVE STUDIES.

Instructors.	Courses.	Subjects and Text-Books.	No. of Students.	No. of Sections.	Hours per week for Students.	Hours per week for Instructors.
Prof. Toy	Hebrew	Hebrew Inflections. — Davidson's Grammar. — Reading from the Hebrew Bible	5 Di.	1	3	3
Prof. Lanman	Sanskrit	Elementary Course. Whitney's Grammar. — Lanman's Reader	1 Se., 3 Ju., 1 Gr.	1	3	3
Prof. Greenough	Classics 1	Introduction to Comparative Philology. — Lectures	1 Se., 1 Ju., 10 So.	1	1	1
Prof. Greenough	Classics 2	Greek and Latin Comparative Philology. — Curtius's Grundzüge der Griechischen Etymologie. — Lectures	2 Se., 1 Ju., 2 So., 1 Gr.	1	2	2
Dr. Wheeler	Greek 1	Herodotus (Book I.). — Sophocles (Oedipus Tyrannus). — Aeschylus (Prometheus)	1 Se., 1 Ju., 24 So., 1 Fr.	1	2	2
Prof. J. W. White	Greek 2	Thucydides (Books VI., VII.). — Aristophanes (Clouds). — Homer (Iliad XVIII.)	3 Se., 3 Ju., 46 So., 1 Di.	2	2	4
Prof. J. W. White	Greek 3	Herodotus. — Practice in reading at sight	3 Se., 4 Ju., 43 So., 4 Fr.	2	2	4
Mr. Dyer	Greek 4	Composition (First Course). — Sidgwick's Greek Prose Composition (Part II.). — Reid's Selections	1 Se., 1 Ju., 35 So., 3 Fr., 1 Un.	2	1	2
Prof. J. W. White	Greek 5	Composition (Second Course). — Sidgwick's Greek Prose Composition (Part III.)	10 Ju., 1 So.	1	1	1
Prof. J. W. White	Greek 6	Composition (Third Course). — Sidgwick's Greek Prose Composition (Part IV.)	10 Se., 1 Ju., 1 Gr.	1	1	1
Prof. Goodwin	Greek 7	Demosthenes (de Falsa Legatione and de Corona). — Aeschines (in Ctesiphontem). — Thucydides (Book I. and II.)	2 Se., 8 Ju.	1	3	3
Prof. Goodwin	Greek 8	Plato (Protagoras and Republic). — Aristotle (Ethics, Books I.–III. and X.)	17 Se., 8 Ju., 2 Gr.	1	3	3
Prof. Goodwin	Greek 9	Aeschylus (Persae and Agamemnon). — Sophocles (Electra and Antigone). — Aristophanes (Frogs)	13 Se., 14 Ju., 2 Gr.	1	3	3
Prof. Sophocles	Greek 10	Arrian (Anabasis). — Polybius (Book III.)	4 So., 1 Fr.	1	2	2
Prof. Smith	Latin 1	Terence (Phormio, Heautontimoroumenos and parts of Andria). — Cicero (Letters). — Horace (Satires and Epistles). — Tacitus (Agricola). — Translation at sight	3 Se., 32 So., 3 Fr.	1	3	3

ELECTIVE STUDIES. — CONTINUED.

Prof. Greenough	Latin 2	Terence (Phormio and Adelphi). — Cicero (Pro Muraena). — Horace (Satires)	1 Ju., 59 So., 1 Fr.	2	2	4
Prof. Smith	Latin 3	Composition (First Course) — Caesar (Gallic War, Book IV.) with colloquial exercises. — Bennett's Second Latin Writer	1 Se., 2 Ju., 34 So.	1	1	1
Prof. Smith	Latin 4	Latin Poetical Literature. — Lectures on Latin Poetry. — Readings from Thackeray's Anthology	5 Se., 4 Ju.	1	2	2
Prof. Lane	Latin 5	Pliny (Epistles). — Tacitus (Dialogue and Histories)	3 Se., 34 Ju., 9 So.	1	3	3
Prof. Smith	Latin 6	Composition (Second Course). — Nixon's Parallel Extracts. — Potts's Exercises. — Potts's Hints towards Latin Prose Composition	2 Se., 5 Ju., 4 So.	1	1	1
Prof. Lane	Latin 7	Cicero (De Natura Deorum). — Plautus (Mostellaria). — Lucretius	22 Se., 7 Ju., 1 Gr.	1	3	3
Prof. Lane	Latin 8	Composition (Third Course). — Translations, chiefly from Niebuhr's History	6 Se.	1	1	1
Prof. Child	English 1	Chaucer's Canterbury Tales. — Bacon's Essays. — Select Poems from Milton and Dryden	14 Se., 9 Ju., 17 So.	1	3	3
Prof. Child	English 2	Shakspere (Nine Plays)	13 Se., 20 Ju., 18 So., 1 Sc.	1	3	3
Prof. Child	English 3	Anglo-Saxon. — Sweet's Anglo-Saxon Reader	1 Se., 4 Ju., 1 So.	1	2	2
Prof. Child	English 4	Early English. — Mätzner's Altenglische Sprachproben	Omitted in 1880-81		2	
Prof. A. S. Hill	English 5	Rhetoric and Themes (Advanced Course)	11 Se., 4 Ju., 2 Gr.	1	3	3
Prof. A. S. Hill	English 6	Oral discussion	17 Se.	1	3 in two weeks	3 in two weeks
Prof. A. S. Hill	English 7	English Literature, from Dryden to Wordsworth	10 Se., 9 Ju., 8 So., 3 Fr.	1	1	1
Prof. W. Cook	German 1	Stoll's Altrömische Leben. — Freytag's Journalisten. — Lindau's Tod der Frau Baronin	1 Se., 2 Ju., 43 So., 4 Fr.	2	3	6
Prof. Bartlett	German 2	Der Neue Plutarch (vols. III., VII.). — Selections from German Lyrics	1 Se., 2 Ju., 75 So.	2	3	6
Mr H. B. Hodges	German 3	Hodges's Course in Scientific German. — Helmholtz's Populäre Wissenschaftliche Vorträge	10 Se., 6 Ju., 9 So., 1 Fr., 2 Sc.	1	2	2
Prof. W. Cook	German 4	Composition and Grammar	1 Ju., 5 So.	1	1	1
Prof. Bartlett	German 5	German Literature of the XIX. Century. — Selections from Körner, Uhland, Grillparzer, Heine	24 Ju., 3 So., 2 Fr.	1	3	3
Prof. W. Cook	German 6	Varnhagen von Ense's Graf Wilhelm zur Lippe. — Goethe's Faust. — Schiller's Jungfrau von Orleans	7 Se., 43 Ju., 4 So., 1 Fr.	2	3	6
Prof. Bartlett	German 7	Dramatic works of Goethe, Schiller, and Lessing. — Literary Histories of Hettner, Kurz, and Koberstein	14 Se., 3 Ju., 1 So.	1	3	3
Prof. Hedge	German 8	Kluge's Geschichte der Deutschen Literatur. — Goethe's Faust and Aus meinem Leben. — Jean Paul's Flegeljahre. — Lectures	5 Se., 1 So.	1	1	1
Prof. Jacquinot	French 1	Brachet's Petite Grammaire Française. 2me Partie. — A. de Musset (Le Merle Blanc). — About (Les Mariages de Paris). — J. Sandeau (Sacs et Parchemins). — E. Labiche (Les Petits Oiseaux)	11 Ju., 41 So., 4 Fr., 4 Law, 4 Sc.	2	3	6
Prof. Böcher	French 2	La Fontaine (Fables). — Racine (Andromaque, Athalie, Esther). — Taine (La Fontaine et ses Fables)	3 Se., 10 Ju., 33 So., 2 Fr., 1 Sc	1	3	3
Prof. Böcher	French 3	Molière. — Corneille (Le Cid). — Montaigne (Essais). — Paul Albert (Littérature Française jusqu'au XVIIme Siècle)	3 Se., 15 Ju., 7 So., 2 Fr., 1 Un., 1 Law, 2 Sc.	1	3	3
Prof. Jacquinot	French 4	Paul Albert (Litterature Francaise au XVIIme Siècle). — V. Cousin (La Jeunesse de Mad. de Longueville). — Molière (Tartuffe). — Corneille (Le Cid) — La Rochefoucauld (Maximes). — La Bruyère (Caractères). — St. Simon (Louis XIV. et sa Cour). — Themes. — Lectures	4 Se., 3 Ju., 3 So., 2 Fr., 1 Gr., 1 Sc.	1	3	3

Mr. Bendelari	French 5	Thiers (Histoire de la Révolution Française)	9 Se., 6 Ju., 6 So.	1	2	2
Mr. Bendelari	Italian 1	Toscani's Grammar. — De Amicis (La Vita Militare). — Manzoni (I Promessi Sposi). — Silvio Pellico (Le Mie Prigioni). — Goldoni (Il Bugiardo)	20 Se., 25 Ju., 14 So., 1 Fr.	1	3	3
Prof. Nash	Italian 2	Giacosa (Acquazzoni in Montagna). — Manzoni (I Promessi Sposi). — Gherardi del Testa (L' oro e l' orpello; Pilade e Oreste). — Bersezio (I Mettunale). — Tasso (Gerusalemme Liberata)	9 So., 4 Ju., 1 Un.	1	3	3
Prof. Nash	Italian 3	Boccaccio (Decamerone). — Petrarca (Rime). — Dante (Divina Comedia). — S. Pellico (Francesca da Rimini)	9 Se.	1	3	3
Mr. Bendelari	Spanish 1	Josse's Grammar. — Gil Blas. — El Eco de Madrid. — Lamartine's Life of Mary Stuart	12 Se., 4 Ju., 10 So., 1 Fr. 1 Un.	1	3	3
Prof. Nash	Spanish 2	Don Quixote. — Hartzenbusch (Juan de las Viñas). — L. F. de Moratin. — Br. de los Herreros. — Martinez de la Rosa	9 Se., 1 Ju., 1 So., 1 Fr., 1 Un.	1	3	3
Prof. Nash	Spanish 3	Calderon. — Martinez de la Rosa. — Lope de Vega. — Cadalso	4 Se.	1	3	3
Prof. Bowen	Philosophy 1	Logic and Psychology. — Bowen's Logic. — Mill's Examination of Hamilton's Philosophy	1 Se., 11 Ju., 16 So.	1	2	2
Prof. Palmer	Philosophy 2	Logic and Metaphysics. — Jevon's Logic. — Ferrier's Lectures on Greek Philosophy	2 Se., 9 Ju., 35 So., 2 Sc.	1	2	2
Prof. James	Philosophy 3	Philosophy of Evolution. — Spencer's First Principles. — Spencer's Data of Ethics	7 Se., 7 Ju., 5 So., 2 Di.	1	2	2
Prof. Peabody	Philosophy 4	Ethics. — Peabody's Moral Philosophy. — Plutarch (De Sera Numinis Vindicta). — Cicero (De Officiis)	67 Se., 55 Ju., 24 So., 9 Fr., 1 Un.	1	3	3
Prof. James	Philosophy 5	Psychology. — Bain's Mental Science	20 Se., 3 Ju., 1 So., 1 Di.	1	3	3
Prof. Palmer	Philosophy 6	English Philosophy. — Locke's Essay on Human Understanding. — Fraser's Selections from Berkeley. — Hume's Essays	18 Se., 10 Ju., 2 So., 1 Sc.	1	3	3
Prof. Bowen	Philosophy 7	Early French and German Philosophy. — Bouillier (Histoire de la Philosophie Cartésienne). — Kant (Critique of Pure Reason). — Bowen's Modern Philosophy	17 Se., 8 Ju.	1	3	3
Prof. Bowen	Philosophy 8	German Philosophy of the Present Day. — Schopenhauer (Die Welt als Wille und Vorstellung). — Hartmann (Philosophie des Unbewussten)	7 Se.	1	3	3
Prof. Dunbar and Dr. Laughlin	Political Econ. 1	Elementary Course. — Mill's Principles of Political Economy. — Lectures	7 Se., 4 Ju., 9 So., 2 Un.	1	2	2
Prof. Dunbar and Dr. Laughlin	Political Econ. 2	Full Course. — Mill's Principles of Political Economy. — Lectures on Currency and the Financial Legislation of the United States	13 Se., 73 Ju., 13 So., 1 Sc.	2	3	6
Prof. Dunbar	Political Econ. 3	Advanced Course. — Cairnes's Leading Principles of Political Economy. — Giffen's Essays in Finance. — Lectures	8 Se., 2 Ju., 1 Gr., 1 Law	1	3	3
Dr. Emerton	History 1	Introductory Course in Mediaeval and Modern History (Germany, Italy, and Spain). — Lewis's History of Germany. — Hunt's History of Italy	1 Se., 3 Ju., 24 So., 1 Fr., 2 Un.	1	2	2
Mr. Macvane	History 2	Introductory Course in Mediaeval and Modern History (France and England). — The Student's Hume. — The Student's History of France	1 Se., 14 Ju., 59 So., 5 Fr., 2 Un.	1	2	2
Mr. Macvane	History 3	Introductory Course in the Constitutional Government of England and the United States	1 Se., 8 Ju., 32 So., 1 Fr., 1 Un.	1	2	2
Prof. Gurney	History 4	Later Roman and Early Mediaeval History. — Merivale's History of the Romans under the Empire. — Gibbon's Decline and Fall of the Roman Empire. — Arnold's Roman Provincial Administration	5 Se., 9 Ju., 1 So.	1	3	3
Dr. Emerton	History 5	The General History of Europe from the beginning of the Ninth to the end of the Thirteenth Century. — Lectures and Theses	8 Se., 15 Ju., 2 So.	1	3	3

ELECTIVE STUDIES. — CONTINUED.

Dr. Emerton	History 6	The Revival of Learning and the Reformation (1300–1550)	Omitted in 1880–81		3	
Dr. Young	History 7	History of England to the Seventeenth Century (Constitutional and Legal). — Stubbs's Select Charters	16 Se., 11 Ju., 4 So.	1	3	3
	History 8	Constitutional and Political History of the United States to the year 1836	Omitted in 1880–81			
Mr. Hoague; Dr. Snow for the second half-year	History 9	Constitutional and Political History of the United States from the year 1836 to 1860	66 Se., 51 Ju., 1 So.	1	3	3
Mr. Macvane	History 10	European History during the Seventeenth Century and the first half of the Eighteenth. — Hallam's Constitutional History of England	54 Se., 34 Ju., 1 So.	1	3	3
	History 11	European History from the Middle of the Eighteenth Century	Omitted in 1880–81		3	
Dr. Young	Roman Law	Institutes of Gaius and Justinian. — Gneist's Syntagma	5 Se., 1 Ju., 1 Gr.	1	3	3
Mr. Moore	Fine Arts 1	Principles of Design in Painting, Sculpture, and Architecture. — Ruskin's works. — Sir Joshua Reynolds's Discourses	14 Se., 9 Ju., 6 So., 1 Gr., 2 Di., 5 Sc.	1	3	3
Prof. Norton	Fine Arts 2	Ancient Art	Omitted in 1880–81		3	
Prof. Norton	Fine Arts 3	Art from the Fall of the Roman Empire to the year 1600. — Burckhardt's Civilization of the Renaissance in Italy. — Lectures	23 Se., 7 Ju., 1 Fr.	1	1	1
Prof. Norton	Fine Arts 4	Greek Art. — Lectures	25 Se., 12 Ju., 2 So., 1 Fr.	1	2	2
Prof. Norton	Fine Arts 5	Romanesque and Gothic Art, from the year 1000 to 1350	Omitted in 1880–81		3	
Prof. Paine	Music 1	Harmony. — Richter's Harmony	2 Se., 1 Ju., 6 So., 2 Fr., 1 Un.	1	2	2
Prof. Paine	Music 2	Counterpoint. — Richter's Counterpoint	2 Se., 7 Ju.	1	3	3
Prof. Paine	Music 3	History of Music. — Lectures	14 Se., 7 Ju., 1 So.	1	3	3
Prof. Paine	Music 4	The Instrumental Music of Haydn, Mozart, Beethoven, and their successors	2 Se., 1 Ju.	1	1	1
Prof. C. J. White	Mathematics 1	Practical Applications of Trigonometry, Plane and Spherical. — Wheeler's Trigonometry. — Problems. — American Ephemeris	1 Ju., 12 So., 1 Fr.	1	2	2
Prof. Byerly	Mathematics 2	Differential and Integral Calculus (First Course). — Byerly's Differential Calculus. — Lectures	1 Se., 2 Ju., 29 So., 1 Gr.	1	2	2
Prof. Byerly	Mathematics 3	Theory of Equations. — Todhunter's Theory of Equations. — Lectures	1 Ju., 18 So., 1 Fr., 1 Gr.	1	1	1
Prof. Peirce	Mathematics 4	Analytic Geometry (for students who had taken the Advanced Freshman Course in Mathematics). — Salmon's Conic Sections	1 Ju., 12 So.	1	3	3
Prof. Peirce	Mathematics 5	Differential and Integral Calculus (Second Course). — Williamson's Differential Calculus. — Williamson's Integral Calculus. — Todhunter's Integral Calculus. — Boole's Differential Equations	9 Ju., 1 Gr.	1	3	3
Prof. Peirce	Mathematics 6	Quaternions (First Course). — Hamilton's Elements of Quaternions. — Tait's Quaternions	1 Se., 5 Ju., 1 Gr., 1 Sc.	1	3	3

Prof. Eustis	Mathematics 7	Descriptive Geometry and Perspective. — Church's Descriptive Geometry	2 Se., 1 So., 1 Sc.	1	3	
Prof. Byerly	Mathematics 8	Differential Equations. — Boole's Differential Equations. — Lectures	3 Se., 1 Ju., 1 Gr., 1 Sc.	1	3	3
Prof. Peirce	Mathematics 9	Analytic Mechanics (Second Course). — Routh's Rigid Dynamics. — Peirce's Analytic Mechanics	3 Se.	1	3	3
Prof. Lovering	Physics 1	Astronomy, Optics, and Acoustics. — Herschel's Outlines of Astronomy. — Deschanel's Treatise on Acoustics and Optics	2 Se., 3 Ju., 10 So., 1 Law	1	3	3
Prof. Trowbridge	Physics 2	Practical Exercises in the Laboratory, including the use of Instruments of Precision	6 Se., 9 Ju., 15 So., 1 Sc.	1	3	3
Prof. Trowbridge	Physics 3	The Conservation of Energy. — Lectures	5 Se., 7 Ju., 5 So.	1	2	2
Prof. Lovering	Physics 4	Electricity and Magnetism. — Undulatory Theory of Light. — Deschanel's Electricity and Magnetism. — Lloyd's Undulatory Theory of Light	2 Se., 1 Ju., 1 Sc.	1	3	3
Prof. Gibbs	Physics 5	The Spectroscope and its Applications. — Thermodynamics and Thermics, including the Applications of Heat. — Lectures	2 Se., 1 Sc.	1	3	3
Prof. Jackson	Chemistry 1	Descriptive Chemistry. — Lectures and Laboratory work	4 Se., 5 Ju., 55 So., 3 Fr.	2	3	6
Prof. Cooke and Mr. Melville	Chemistry 2	Determinative Mineralogy and Lithology. — Dana's Text-book of Mineralogy. — Study in the Mineral Cabinet	12 Se., 11 Ju., 10 So., 1 Un., 4 Sc.	1	3	3
Prof. H. B. Hill	Chemistry 3	Qualitative Analysis. — Hill's Lecture Notes. — Laboratory work	18 Se., 27 Ju., 1 So., 6 Sc.	1	3	3
Prof. Cooke and Mr. Kinnicutt	Chemistry 4	Quantitative Analysis. — Laboratory Work	14 Se., 7 Ju., 1 Un.	1	3	3
Prof. H. B. Hill	Chemistry 5	The Carbon Compounds. — Fittig (Grundriss der organischen Chemie). — Lectures and Laboratory work	10 Se., 1 Sc.	1	3	3
Prof. Cooke	Chemistry 6	Advanced Course in Experimental Chemistry. — Laboratory work	2 Se., 1 Ju.	1	3	3
Prof. Cooke	Chemistry 7	Crystallography and the Physics of Crystals. — Study in the Mineral Cabinet	Omitted in 1880–81		3	
Mr. Davis	Natural Hist. 1	Physical Geography and Meteorology. — Buchan's Introductory Text-book of Meteorology	7 Se., 1 Ju., 2 So., 3 Sc.	1	3	3
Dr. Mark	Natural Hist. 2	Zoölogy. — Lectures	25 Se., 15 Ju., 22 So., 1 Fr., 1 Un., 3 Gr., 1 Di., 7 Sc.	1	2	2
Prof. Goodale	Natural Hist. 3	Botany. — Gray's Structural Botany. — Lectures and Laboratory work	34 Se., 27 Ju., 16 So., 1 Fr., 4 Un., 1 Gr., 1 Di., 1 Sc.	1	3	3
Prof. Shaler	Natural Hist. 4	Geology. — Dana's Text-book of Geology. — Lectures	56 Se., 36 Ju., 39 So., 5 Fr., 12 Sc., 2 Di., 2 Gr.	1	3	3
Prof. Farlow and Dr. Faxon	Natural Hist. 5	Biology. — Morphology, Histology, and Development of Plants and Animals. — Lectures and Laboratory work	16 Se., 11 Ju., 4 So., 7 Sc.	1	3	3
Dr. Faxon	Natural Hist. 6	Advanced Zoölogy. — Lectures and Laboratory work	7 Se., 1 So., 1 Gr., 2 Sc.	1	3	3
Prof. Goodale and Prof. Farlow	Natural Hist. 7	Advanced Botany. — Lectures and Laboratory work	5 Se., 3 Ju., 1 So.	1	3	3
Prof. Shaler and Mr. Davis	Natural Hist. 8	Advanced Geology. — Lectures	12 Se., 9 Ju., 1 So.	1	3	3

Of the twenty-five for 1881, sixteen are now in College pursuing their studies for the degree, and in several cases under the stimulus of a well-grounded hope of ultimate restoration to their original classes. In three cases at the end of the last year the Faculty, in conformity with the spirit of the present regulation, restored students who had been dropped from their classes in some former year, their deficiencies being either made up or satisfactorily reduced, and evidence of substantial improvement being given; and there is reason to believe that these examples are now exerting a salutary influence upon students at present suffering under the same penalty.

Of the Seniors presenting themselves for the degree of Bachelor of Arts, thirteen failed to receive the degree. Two of them were deficient in studies of the Senior year alone, seven others in studies of more than one year, and four were so heavily in arrears that their names were finally withdrawn. For the past seven years the number of Seniors failing to obtain the degree by reason of failure in scholarship has been as follows: —

	1875.	1876.	1877.	1878.	1879.	1880.	1881.
Passed in all their work . . .	183	135	170	144	189	162	182
Failed, but can make up . .	11	6	17	11	5	6	9
Failed, and must repeat the year	2	3	2	4	..	..	..

Few cases of discipline occurred during the year, and in only two of them did the Faculty find it necessary to inflict the penalty of suspension. In one instance a grave offence against good order was punished by suspension for four months, and in the other dishonesty at an examination led to a like sentence. This greatly diminished use of the only effective penalty at the command of the Faculty is in considerable part due to a change of system which has swept away many offences once enumerated in the regulations; but it is also in part due to a substantial improvement in the general tone of the College, which has made cases of disorder less frequent. There can be no question that the mass of the students have responded with proper feeling to the efforts made by the Faculty to preserve good order by a better public sentiment rather than by surveillance and a code, and that a gain has been made not merely in the outward observance of decorum, but in character and the ability for self-control. That much still remains to be done in the way of improvement, nobody can doubt who considers the conditions under which eight hundred young men are gathered together in Cambridge; but what has already been gained is the complete justification of the liberal policy pursued by the Faculty, and the best encouragement for its continuance.

The examination for admission to the Freshman class in 1881 was conducted wholly upon the requirements under the new method, first used at the examination in 1878. The number of candidates presented was two hundred and fifty-three, and the results as compared with those in previous years under the same method were as follows: —

1878. 133 Candidates. 1879. 179 Candidates. 1880. 236 Candidates. 1881. 253 Candidates.	MINIMUM REQUIREMENTS.										
	Caesar and Virgil.	Latin at Sight and Comp.	Xenophon or Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Plane Geometry.	Minimum Physics.	English Composition.	French or German.
Percentage failing in each study.											
1878	14	7.5	29	18	20	13	31.5	43	14	19	36
1879	8	11	20	23	18	14.5	28.5	37	19	28.5	21
1880	14	6	17	17	15	14	29	36	11	17	13
1881	8	6	12	13	15	14	25	27	7	10	18

	MAXIMUM REQUIREMENTS.								
	Cicero and Virgil.	Latin at Sight and Comp.	Herodotus.	Greek Comp.	Iliad.	Trigonometry.	Solid Geometry.	Maximum Physics.	Chem. or Botany.
Percentage failing in each study.									
1878	7	15	17.5	36	21	29	65	38	57
1879	16	28	22	33	13	32.5	60	48	24
1880	14	22	12	33	14	39	48	18	9
1881	15	13	12	19	12	30	41	16	27

The following are the general results of the examination as regards the admission or the rejection of candidates: —

Candidates offered	253
" admitted	231
" " clear . .	99
" rejected	22

The combinations of maximum subjects offered by the candidates examined exhibit no material change, as may be seen from the following comparative statements: —

Candidates under Method I.	1878.	1879.	1880.	1881.
[Required to offer the maximum in at least *two* subjects.]				
Offered Maximum in				
Latin, Greek, Mathematics, and Physics .	2	3	2	4
Latin, Greek, and Mathematics.	4	8	15	14
Latin, Greek, and Physics	2	3	7	5
Latin, Mathematics, and Physics	2	. .	2	1
Greek, Mathematics, and Physics	. .	1	. .	1
Latin and Greek	104	109	159	177
Latin and Mathematics.	8	14	17	13
Latin and Physics	9	23	20	25
Greek and Mathematics	1	2	. .	2
Greek and Physics	1	1	4	. .
Mathematics and Physics	5	15	10	11
Total number of candidates	138	179	236	253

The success of candidates who offered themselves in 1881 for a preliminary examination on a part of the subjects required for admission, and propose to complete their work in some future year, is shown by a statement giving the number of subjects in which such candidates passed: —

Preliminary Examination.	Candidates.	In Five Subjects.	In Six Subjects.	In Seven Subjects.	In Eight Subjects.	In Nine Subjects.	In Ten Subjects.	In Eleven Subjects.	In Twelve Subjects.	In Thirteen Subjects.	Failed to pass in Five Subjects.
Method I.											
1878	133	16	20	12	15	18	6	..	..	..	46
1879	215	38	29	23	29	13	10	3	..	..	70
1880	214	30	24	31	33	22	10	..	..	..	64
1881	266	38	30	46	65	17	19	5	..	..	46
Method II.											
1878	108	20	20	6	8	6	6	3	1	2	36
1879	30	5	4	1	2	6	3	1	1	..	7
1880	4	2	1	..	1	..	..	..	..	..	..

The proportion of candidates examined in each subject under the new method, and the proportion who failed in each, are as follows: —

Preliminary Examinat'n. 1878, 133 Candidates. 1879, 215 " 1880, 214 " 1881, 266 "	Caesar and Virgil.	Latin at Sight.	Xenophon or Greek Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Geometry.	Physics.	English.	French.	German.
Percentage of the whole number of candidates who were examined in each study.												
1878	95	86	69	71	78	90	71	29	71	82	60	6
1879	89	86	74	80	77	96	93	55	55	69	56	7
1880	92	88	78	76	84	97	7	46	61	53	64	5
1881	88	86	78	79	76	97	82	46	74	61	54	5
Percentage of failure among those examined in each study.												
1878	33	28	30	47	40	14	38	72	20	34	26	50
1879	24	25	33	44	23	26	52	78	15	53	13	14
1880	25	25	25	26	39	22	50	61	7	34	21	30
1881	15	19	28	24	22	21	35	41	17	19	17	14

A few changes of some importance were made in the courses of study at the close of the year. In place of the course in Greek and Latin Comparative Philology, a course for practice in speaking and writing Latin was established, to be carried on by the use of the language in the class-room in the critical study of an author, and to be conducted by Professor Greenough; and an additional course in Latin Prose Literature, for the purpose of rapid reading in the Latin authors, was also established, to be conducted by the same instructor. The courses in German were recast, in order to secure greater consecutiveness of work, and at the same time to give the student his choice between methods of instruction. In Philosophy the elementary course hitherto given by Professor Bowen was withdrawn by him, with the approval of the Faculty, in order that the whole of his valuable services might be devoted to advanced instruction. The course in Ethics heretofore given by Professor Peabody was discontinued in consequence of his retirement, and a new course in Ethics, adapted for students who have already made some progress in Philosophy, was established under Professor Palmer, the course heretofore given in the English Philosophy being suspended. Professor James's course in the Philosophy of Evolution was discontinued, and a course in Psychology established in its place. The first or partial course in Political Economy was discontinued, it being found that the great majority of students prefer a fuller treatment of the subject. The illness of Mr. Hoague had caused the transfer of his courses in American Constitutional and Political History to Dr. Snow, and at the close of the year it was found expedient to consolidate the two courses into one, covering the whole period to 1850. And, finally, in the Fine Arts two consecutive courses of two hours each were established in place of the single course in the Principles of Design previously given by Mr. Moore.

In this connection it is proper to record that during the last year the senior instructors in both Greek and Latin undertook a part of the work of instruction of the Freshman class. Heretofore these officers have carried on elective studies only; but it being believed by their associates that greater efficiency and spirit might be given to the work of the Freshman year if the professors of the classical departments were brought into contact with the class, Professor Goodwin read with the Freshmen the Clouds of Aristophanes, and Professor Lane the Mostellaria of Plautus. The results were so promising that the experiment is to be repeated in the present year, and is also to be tried in some other parts of the prescribed work of the College course.

The range of the elective studies open to students has been considerably extended in the last five years, chiefly by the addition of higher courses primarily established for graduates. Admission to these courses has been freely given to undergraduates upon application, whenever ability to profit by the study has been shown; and it is probable that the resort to them will be further encouraged by the removal of such distinction as now exists between graduate and undergraduate courses. Counting the graduate courses, then, with the other elective studies, and omitting the introductory courses in Philosophy, which correspond to the course in Logic and Metaphysics formerly prescribed for the Junior class, the number of hours of instruction per week from which the student makes his choice has risen from 262 in 1877–78 to 347 in 1881–82. In nearly every department the instruction offered has been enriched, in greater or less degree, by systematizing and consolidating the more elementary work and increasing the superior; but the most marked development has been the offering of a greatly increased body of instruction in the Semitic languages and Sanskrit, the establishment of courses in the classics fitted for advanced graduate study, and the remarkable extension of the advantages offered in Natural History. Comparatively few students in College, it may be said, are

EXERCISES PER WEEK IN ELECTIVE COURSES OFFERED.

Subjects.	1871–72	1872–73	1873–74	1874–75	1875–76	1876–77	1877–78	1878–79	1879–80	1880–81	1881–82
Hebrew	..	3	3	3	3	3	3	4	4	9	6
Arabic	..	..	..	..	..	..	..	..	..	2	2
Sanskrit and Zend	..	3	3	6	3	3	3	6	6	11	10
Classical Philology	..	..	..	..	3	3	2	2	3	3	8
Greek	24	25	22	23	25	23	23	24	26	29	25
Latin	10	15	15	15	19	20	18	22	18	22	26
English	6	8	8	5	8	11	14	15	16	16	16
German	9	8	8	11	14	17	19	24	25	22	23
French	14	14	14	18	12	15	15	15	15	14	18
Italian and Spanish	11	11	11	14	17	17	17	10	20	20	20
Philosophy	12	12	12	9	9	12	12	18	19	20	13
" Introductory	..	..	..	..	..	..	..	..	4	4	4
Ethics	3	3	3	3	3	3	3	3	3	3	3
Political Economy	3	3	3	6	6	6	6	6	9	9	7
Roman Law	..	3	..	3	3	3	3	3	4	4	5
History	15	17	17	20	20	23	23	25	19	24	29
" Introductory	..	..	..	..	..	..	..	..	6	6	6
Mathematics	21	24	20	24	20	23	24	28	30	26	26
Physics	12	12	12	14	15	15	17	22	21	19	19
Chemistry	11	11	14	14	14	18	18	21	26	26	23
Natural History	14	20	23	23	23	25	24	30	42	46	36
Music	8	5	8	11	14	11	12	13	13	15	14
Fine Arts	..	..	..	6	9	4	6	9	8	6	8
Aggregate	168	197	196	228	240	255	262	308	337	356	347

likely to enter upon the extensive fields thus thrown open to them. On this question of numbers it is much too early to pronounce an opinion; but all students in College, it is believed, feel the effect of a more stimulating intellectual atmosphere, created by the presence and example of persons engaged in the highest pursuits. Both as regards the intellectual activity of students and the quality of the instructing body, the vigorous life of the College hereafter is to be promoted most effectively by the building up of a broad and solid structure of University work.

Of the use actually made of the liberty of selection from this increasing variety of courses, enough has been said in former reports to show that in the great majority of cases studies are chosen systematically and consecutively, the actual disposition by the student of his three years of elective study generally disclosing some settled plan of work, suggested either by an original bent of mind or by his plans for the future. The effect produced by the elective system, however, on the studies themselves must continue to be the subject of careful observation. That some change should take place in the relative importance of studies which once held exclusive possession of the field, and are now compelled to share it with others, was inevitable. It was also to be expected that with the growth of the College in numbers, and the enlargement of its constituency, it should have a new class of students attracted by the opportunity of stepping aside from the traditional subjects. In order to exhibit the actual amount of change thus far produced by these and other influences, I now present a table, in continuation of one given in my report for 1876–77, showing the proportion of time given to the various elective studies by the classes electing them, for a series of years. The table was constructed by carefully tabulating the returns in every study and calculating from them the proportion, in which one thousand hours of attendance by students was in fact divided among the several departments, as the result of a free choice, from the year 1871–72 to the year 1881–82 inclusive.

It must be observed that the returns on which this table rests are those of the latter part of the year, except for 1881–82, the figures formerly given for 1877–78 having been revised for the sake of uniformity in this particular. It is also to be observed that the returns here used in Philosophy and History do not

PROPORTION OF 1000 HOURS TAKEN IN EACH STUDY.

Subjects.	1871–72	1872–73	1873–74	1874–75	1875–76	1876–77	1877–78	1878–79	1879–80	1880–81	1881–82
Hebrew, Sanskrit, and Philology	..	..	1	3	5	5	3	6	5	5	4
Greek	114	117	89	72	82	65	68	74	74	69	66
Latin	156	149	151	140	123	95	99	102	83	70	68
English	22	28	36	16	20	28	41	31	55	52	48
German	83	143	103	92	105	113	91	110	115	103	109
French	126	52	77	74	86	107	88	77	66	64	76
Italian and Spanish . .	28	22	26	38	47	57	49	57	48	52	47
Philosophy	16	30	42	59	53	56	57	49	30	41	28
Ethics	18	7	15	23	30	31	27	40	41	64	14
Political Economy . . .	56	45	45	74	75	55	62	64	56	51	76
Roman Law	..	11	..	9	13	12	8	4	8	3	12
History	102	132	126	135	116	118	110	74	105	.114	146
Mathematics	60	51	65	45	34	27	34	36	33	32	36
Physics	75	36	46	31	30	8	29	15	24	26	37
Chemistry	52	78	58	53	49	71	67	64	65	74	84
Natural History	85	94	115	91	58	102	122	90	114	138	101
Music	7	5	5	10	13	10	9	16	24	18	13
Fine Arts	..	..	..	35	61	40	36	91	54	24	35
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

include the introductory courses which, since 1878–79, have taken the place of the work once prescribed in these departments. Examination of the figures given from year to year will disclose, moreover, some remarkable and apparently eccentric variations, easily explained by circumstances which are well known but not reducible to tabular statements. Thus, the fluctuation in the amount of time given to Ethics is due to the withdrawal of the popular course given for several years by Professor Peabody, and the substitution of an entirely different one under Professor Palmer, adapted, as has been said, only for students who have had some preliminary training. The temporary absence of instructors and the consequent suspension of their courses in some cases, and other similar personal considerations, account for some striking vicissitudes in History and in Natural History; while the varying attention given to the Fine Arts is due mainly to an unavoidable reduction in the amount of Professor Norton's instruction, not yet wholly made up. Apart from such annual fluctuations as these, it will be seen that the tendency for the last five years has been to diminish the proportion of time given to the ancient languages. There is reason to believe that the current year, with which the table ends, is exceptional both as regards the proportion of time used and the number of students pursuing classical studies, which, as was stated in my last report, shows little loss of ground; still, the tendency in the series of years is plainly marked, and is no doubt indicative of the changed requirements of the community. There has been effected at the same time a considerable improvement in the methods of instruction, so that the mass of students are carried to a point not reached by them a few years ago; but a certain degree of attainment being passed, the disposition to enter upon other studies must be said to have gained. Modern languages as a whole have maintained their ground, without great change; German holding, as heretofore, the leading place. Philosophy, History, and the related subjects have gained; the gain being made chiefly by History, however. Indeed, Philosophy has lost, unless we count with it the present course in Ethics, the character of which perhaps connects it more closely with Philosophy than with the course for which it is nominally the substitute. A part of the falling off for the present year is no doubt the consequence of the temporary suspension of the course in English Philosophy usually given by Professor Palmer, and the small number of the remaining courses, but it is also probable that the interest in the subject is not so widespread as it was a few years ago. There has been no loss in the quality of the students pursuing this study. History has gained heavily in the last three years, the gain being chiefly in the courses in modern and constitutional History. The proportion of time given to Mathematics, although small, is singularly constant. In Physics, Chemistry, and Natural History there has been on the whole some gain, with great fluctuations, however, from year to year, especially in Natural History, in which department the courses are especially sensitive to changes of instructors and to similar personal considerations. Music and the Fine Arts, taken together, cannot be said to have finally changed their position in any considerable degree.

On the whole, it does not appear that the tendency of the elective system has been to develop abnormally any particular class of studies. Some departments have fallen off and others have gained; but, on the whole, the general balance of the College studies has not greatly changed in the last five years. Any apprehension that may have been felt of a tendency to concentrate attention upon the easier class of subjects has failed to be justified, as well as the similar apprehension that severe pursuits, like that of the Mathematics, would disappear. It would be too much to expect that the relations of the several studies should undergo no further change. With the development of instruction, and with the constant revision and rearrangement of courses, which is the best safeguard against stagnation, the comparative attractions of departments will vary from year to year; the slowly changing wants of the community must also affect the resort to particular branches; but we may expect with some confidence, as the result of experience thus far, that under the system of free choice the great departments of study, linguistic, philosophical, historical, and scientific, will continue to divide the attention of students in a manner not far different from the present.

CHARLES F. DUNBAR, *Dean.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I have the honor to submit the following report on the condition of the Graduate Department of the University during the academic year 1880–81: —

The number of courses of instruction arranged with special reference to graduates was forty-four.

Twelve persons were admitted to candidacy for the degree of A.M.; and the whole number of candidates for that degree in any part of the year was fourteen, of whom five attained the degree, and four are still candidates.

Twelve persons were admitted to candidacy for the degree of Ph.D.; and the whole number of candidates for that degree in any part of the year was twenty-one, of whom two attained the degree of Ph.D., two received the degree of A.M., and fourteen (including one of those who took the degree of A.M.) are still candidates.

Two persons were admitted to candidacy for the degree of S.D.; and the whole number of candidates for that degree in any part of the year was five, of whom one attained the degree, and four are still candidates.

GRADUATE COURSES OF INSTRUCTION, 1880–81.

Instructors.	Departments.	Subjects.	Number of Students.	Exercises per week.
Prof. Toy	Semitic Languages	Advanced Hebrew and Aramaic. Hebrew Syntax. Gesenius's Grammar. Reading in the Targums and Daniel	8 Div.	2
Prof. Toy	Semitic Languages	Lectures on the History of Ancient Hebrew Literature. Jewish Archaeology; Ewald's Antiquities of Israel	9 Div.	1
Prof. Allen	Classical Philology	Text Criticism and Interpretation. Subject for 1880–81: Euripides' Alcestis and Horace's Odes	2 Grad. 1 Sen.	2
Prof. Allen	Classical Philology	Mythology and Religious Institutions of the Greeks and Romans	2 Grad. 4 Sen.	2
Prof. Smith and Prof. Greenough	Classical Philology	Critical Study from the Original Sources of Virgil's Georgics, and Cicero's De Re Publica	1 Grad. 8 Sen.	2
Prof. Bartlett	Germanic Philology	Gothic. Heyne's Ulfilas and Bernhardt's Vulfila	1 Sen.	1
Prof. Bartlett	Germanic Philology	Middle High German. The Nibelungenlied	8 Sen. 1 Jun.	1
Prof. Palmer	Philosophy	Hegel's Logic	2 Grad. 2 Div. 2 Law	1 (two hrs.)
Dr. Emerton	History	Study of Historical Sources for the rise of the French Communes 1100–1300	2 Grad. 2 Sen.	1 (two hrs.)
Prof. Torrey	History	Public International Law. History of Modern Treaties	8 Sen. 1 Grad.	8
Prof. Torrey	History	Forms of Government and Political Constitutions, particularly in Continental Europe, since 1789	5 Sen. 2 Grad.	2
Prof. Gurney	History	Roman History to the Fall of the Republic, with especial reference to the development of Political Institutions in Greece and Rome.	1 Sen. 3 Soph.	2
Prof. Paine	Music	Richter's Canon and Fugue. Composition	3 Sen. 1 Jun. 2 Unm.	8
Prof. Paine	Music	Free Thematic Music. Bussler's Formenlehre. Composition	8 Sen. 2 Unm.	2
Prof. Trowbridge	Physics	Experimental Physics, with Laboratory work, for advanced students	2 Jun. 2 Sen.	8
Prof. Trowbridge	Physics	Mathematical Physics (Maxwell's Electricity and Magnetism)	2 Sen.	8
Dr. Mark	Natural History	Embryology (with Laboratory work)	2 Grad. 8 Sen. 1 Sci.	1
Prof. Goodale	Natural History	Experimental Vegetable Physiology	1 Grad.	2
Prof. Farlow	Natural History	Anatomy and Development of Higher Cryptogams, and of Fungi and Algae	2 Grad.	8
Prof. Shaler	Natural History	Palaeontology (with Laboratory work)	4 Sen. 2 Grad.	2
Prof. Shaler	Natural History	Historical Geology (with Laboratory work)	1 Sen. 1 Sci. 2 Grad.	2
Prof. Shaler and Mr. Davis	Natural History	Geological Fieldwork; for training in the principles of Geology, with work in the field and in the preparation of reports.	2 Sen. 2 Sci. 2 Grad.	–
Prof. Whitney	Natural History	Dynamical Geology	3 Grad. 3 Sci. 3 Instr.	2
Prof. Whitney	Natural History	Economical Geology	1 Grad. 8 Sci.	2

The names of those on whom the degrees of A.M., Ph.D., and S.D. were conferred at Commencement, 1881, are as follows: —

William Zebina Bennett, A.B., 1878.
Henry Champion Jones, A.B., 1880.
James Otis Lincoln, A.B., 1873.
Edwin Howard Lord, A.B. (*Bowdoin Coll.*), 1871.
William Taggard Piper, A.B., 1874.
Charles Wellington Stone, A.B., 1874.
Alfred Worcester, A.B., 1878.

Ph.D.

Francis Ellingwood Abbot, A.B., 1859.

Department, Philosophy. *Subject*, Metaphysics. *Thesis*, "Scientific Philosophy, a Theory of Human Knowledge, accompanied by Tables of Cosmical and Mental Categories."

William Harlow Melville, A.M., 1876.

Department, Physics. *Subject*, Crystallography. *Thesis*, "A Crystallographic Study of a few Minerals and Chemical Substances."

S.D.

Charles Frederic Mabery, S.B., 1876.

Department, Physics. *Subjects*, Organic and Inorganic Chemistry. *Thesis*, "Acrylic Acid and its Derivatives."

The Parker Fellowships, during the year 1880–81, were held by

James Greenleaf Croswell, A.B., 1873,
Joseph Silas Diller, S.B., 1879,
Washington Irving Stringham, A.B., 1877,
Ph.D. (*Johns Hopkins Univ.*), 1880,
George Lincoln Walton, A.B., 1875, M.D., 1880;

and the Kirkland Fellowship by

Oscar Roland Jackson, A.B., 1876.

Messrs. Croswell and Jackson resigned their fellowships at the end of the academic year, after holding them for the full period of three years.

Mr. Diller and Doctors Stringham and Walton, having presented satisfactory evidence of the value of their work during the year, were reappointed to their fellowships for the year 1881–82.

Frank Hugh Foster, A.B., 1873,

was appointed to a Parker Fellowship for the year 1881–82, in place of Mr. Croswell; and

Paul Shorey, A.B., 1878,

was appointed to the Kirkland Fellowship for the year 1881–82, in place of Mr. Jackson.

JAMES MILLS PEIRCE, *Secretary of the Academic Council.*

To the President of the University:

Sir, — As Dean of the Theological Faculty, I respectfully submit the following report for the academic year 1880–81. Twenty-five students were connected with the school during the year, as follows: —

Senior Class	6
Middle Class	5
Junior Class	5
Special Students	9

The nature and amount of the work of the School may be learned from the accompanying table, pp. 66, 67. In addition to the studies there named, it should be stated that Mr. Allen read the *De Natura Deorum* of Cicero with a voluntary class including about half the members of the School. The subject of Charities and Reforms was represented this year only by an interesting lecture given by Charles L. Brace, of New York, in regard to his important work in that city. This lecture was afterward printed at the request of the Faculty and students of the School.

Fourteen students received instruction in connection with College classes. These took in all ten studies, as follows: six studied Philosophy with Professor James; two, Philosophy with Professor Palmer; five attended the lectures of Professor Hedge on German Literature; three studied German with Professor Bartlett, and one with Mr. Lutz; two, the Fine Arts with Professor Moore. Geology, Zoölogy, Electricity, Mineralogy, Rhetoric, and Greek, were pursued each by one student. In several cases, more than one of these studies were taken by the same individual.

The voluntary system of attendance on school exercises had been quietly adopted a year or two earlier. Records of absences were, however, kept. This year the method was completely carried out, all monitorships being abolished. It is gratifying to state that the attendance on all exercises during the year was remarkably good.

The money that had been so generously given in response to the late appeal of the School for an increased endowment, made it possible during the last year to fill once more the Parkman Professorship. The appointment of Rev. Francis G. Peabody to this position was a most fortunate one for the School. The appointment was in no sense an experiment, as Mr. Peabody had shown his eminent fitness for the work during the year in which it had been practically in his hands.

The subject specially committed to Professor Peabody will be Homiletics. In this School, Homiletics is taught largely by practical methods, as will appear from the table to which reference has already been made. It is not believed that the writing of sermons can be to any great extent learned from lectures. The teacher works with the students, learns what each is trying to do, and guides him to the accomplishment of his purpose. The labor demanded of the teacher thus varies with the number of students. At present, time is left to the Instructor for teaching other branches. After Homiletics, Ethics will be the subject most important in the work of the Parkman Professor. At the same time he will be able to supplement the course in Systematic Theology by lectures on the Philosophy of Religion. The Bussey Professor will retain the departments of Systematic Theology and Comparative Religion. These two studies are closely connected, and it is helpful to have both in the same hands. The new appointment will make it possible to extend the treatment of Systematic Theology, an extension which is greatly needed.

The librarian, Mr. C. J. Staples of the Senior class, rendered valuable service during the year, devoting to this charge much time and labor. An entire recount of books on the shelves was made, by which it appears that in October, 1880, these numbered 18,757. In pursuance of the plan by which works not belonging to the department of Theology, and not there duplicated, are transferred to the Library at Gore Hall, 996 volumes have been thus removed. One hundred and two books have been added to

Instructor.	Subjects and Methods of Study.	Number of Students.	Exercises per Week.
	JUNIOR CLASS.		
Prof. Everett.	Philosophical Introduction to Theology. Everett's " Science of Thought." Lectures.	7	1
Prof. Abbot.	New Testament; Textual Criticism of Gospel of Matthew, chapters i.–xiii. Lectures and Recitations. Dissertations by students.	5	2
Prof. Toy.	Hebrew Forms, Translation from Hebrew into English and from English into Hebrew. Portions of Genesis, Ezekiel, and Psalms were read, and of these a part committed to memory. Lectures on the origin of Hebrew Poetry. Text-books, Davidson's Grammar, Hebrew Bible, Lexicon of Gesenius or Davies.	7	3
Mr. Allen.	Ecclesiastical History, First Period, to end of eighth century; Lectures, with discussions, and constant reference to original authorities.	6	2
Prof. Peabody.	Homiletics, Lectures; Analysis and plans of sermons.	6	1
Mr. Ticknor.	Elocution.		
	MIDDLE CLASS.		
Prof. Everett.	Comparative Religion; Studies of Vedic, Avestan, Buddhist, and Chinese Religions; with constant reference to translations and other works reserved for the use of students.	9	2
Prof. Abbot.	New Testament; Exegesis of the Gospel of Matthew, chapters xiv.–xxviii., Critical Introduction to Gospel of John and Exegesis of chapters i., ii.	7	2
Prof. Toy.	Biblical Aramaic Forms and Syntax, Hebrew Syntax, Reading from Deuteronomy, Ezekiel, Psalms, Daniel, Ezra, Esther, and the Aramaic in Riggs's Manual. Exegesis of the text read. Lectures on Old-Testament Prophecy and the date of the Book of Daniel. Text-books, Riggs's Chaldee Manual and Gesenius's Hebrew Grammar.	6	2

MIDDLE CLASS — CONTINUED.

Mr. Allen.	Ecclesiastical History, Second Period, from ninth to fifteenth century inclusive. Chief authorities, Milman's Latin Christianity and Greenwood's Cathedra Petri. The students were also referred to other sources. — Lectures, Discussions, and Essays.	6	2
Prof. Peabody.	Homiletics, Sermons preached by the students before the two upper classes and criticised by students and teacher.	15	1
Prof. Peabody	Ethics; Lectures, Conversations, and References.	7	1
Mr. Ticknor.	Elocution. Each student thirty minutes a week.		

SENIOR CLASS.

Prof. Everett.	Systematic Theology; Lectures. Essays by students.	9	8
Prof. Abbot.	New Testament; Exegesis of Epistle to the Romans, chapters iii.–xvi.; Critical Introduction to the Gospel of John, and Exegesis of select portions.	8	2
Prof. Toy.	Lectures on the History of Old Testament Literature. Ewald's "Antiquities of Israel" was read with questions and comments.	8	1
Mr. Allen.	Ecclesiastical History, Third Period, from beginning of sixteenth century to the present time; Lectures and Discussions.	7	2
Prof. Peabody.	Homiletics, with the Middle Class as above.	15	1
Prof. Peabody.	Pastoral Care; twelve Lectures, open to the whole school.	20	1
Mr. Ticknor.	Elocution. Each student forty-five minutes a week.		

GENERAL EXERCISES.

Preaching by some student every Friday evening, open to the public; the sermon carefully prepared and submitted in advance to the teacher of Homiletics.
Extempore speaking once in two weeks; each speaker being criticised by members of the Faculty in the presence of the School.
Conference meeting, conducted by students, the Faculty being present and taking part, once in two weeks (alternating with the above).
Morning prayers, conducted by students and teachers.'

the Library during the year by donation or purchase. Professor F. G. Peabody presented to the School a bust of Henry W. Bellows, D.D. This was received with pleasure and placed in the Library.

C. C. EVERETT, *Dean.*

To the President of the University:

Sir, — I beg to submit the following report upon the Law School for the academic year 1880–81: —

The table on pp. 70, 71, gives the courses of study and instruction during the year, the names of the instructors, the text-books used, the number of exercises per week in each course, and the number of students who offered themselves for examination in each course at the end of the year.

There were seven Moot Courts held during the year, — four by Professor Gray, two by Professor Thayer, and one by Professor Ames.

The following table exhibits the attendance at the School during the last eleven years: —

	1870–71.	1871–72.	1872–73.	1873–74	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	1879–80.	1880–81.
Whole number of students in the School . .	165	138	117	141	144	173	199	196	169	177	161
Number that were in the School during the whole year	107	107	109	121	130	153	168	172	137	138	136
Number that were in the School only part of the year	58	31	8	20	14	20	31	24	32	39	25
Average number	136	123	113	131	137	163	184	183	154	157	149

The following table exhibits the School as divided into classes since the establishment of the three years' course and the examination for admission: —

	1877–78.	1878–79.	1879–80.	1880–81.
First Year	72	63	78	57
Second Year . . .	79	50	32	58
Third Year. . . .	—	—	21	14
Special Students. .	31	47	46	32

In regard to the foregoing table, it is to be observed that, although the three years' course went into operation at the beginning of 1877–78, there was no third-year class until 1879–80. It is also to be observed that the second-year class of 1877–78 did not take the three years' course, but was graduated at the end of the second year, that class having entered the School before the three years' course went into operation.

The following table exhibits the results of the examinations for admission in each year since they were established: —

	1877–78.	1878–79.	1879–80.	1880–81.
Offered	16	15	18	25
Admitted . . .	7	7	12	13

The following table exhibits the results of the examinations for a degree in each year since the establishment of the three years' course: —

	1877–78.			1878–79.			1879–80.			1880–81.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year .	66	51	15	50	42	8	73	69	4	45	43	2
Second Year	66	47	19	40	39	1	28	26	2	49	46	3
Third Year .							22	18	4	18	18	0

In regard to the foregoing table, it is to be observed that it includes no special students, and hence that all the applicants included in it were either graduates of colleges, or had passed the examination for admission. Of course, this remark does not apply to the second-year class of 1877–78, and this accounts in part for the much greater number of failures in that class.

The following table exhibits the number of students who, since the establishment of the three years' course, have been examined

Studies.	Instructors.	Text-books.	Exercises per week.	Number of students examined.
FIRST YEAR.				
Real Property.	Prof. Gray.	No text-book.	2	45
Contracts.	Prof. Langdell.	Langdell's Cases on Contracts.	3	46
Torts.	Mr. Howland.	Ames's Cases on Torts.	8	45
Criminal Law and Criminal Procedure.	Prof. Thayer.	No text-book.	1	48
Civil Procedure at Common Law.	Prof. Ames.	Ames's Cases on Pleading.	1	40
SECOND YEAR.				
HONOR COURSE.				
Evidence.	Prof. Thayer.	No text-book.	2	89
Jurisdiction and Procedure in Equity.	Prof. Langdell.	Langdell's Cases in Equity Pleading.	2	89
Property.	Prof. Gray.	No text-book.	2	39
Trusts and Mortgages.	Prof. Ames.	Ames's Cases on Trusts.	2	39
ORDINARY COURSE.				
Elective Subjects.				
Evidence.	Prof. Thayer.	No text-book.	2	15
Jurisdiction and Procedure in Equity.	Prof. Langdell.	Langdell's Cases in Equity Pleading.	2	4
Property.	Prof. Gray.	No text-book.	2	16
Trusts and Mortgages.	Prof. Ames.	Ames's Cases on Trusts.	2	16
Sales of Personal Property.	Prof. Thayer.	Langdell's Cases on Sales.	2	11
Bills of Exchange and Promissory Notes.	Prof. Ames.	Ames's Cases on Bills and Notes.	2	11

THIRD YEAR.

Honor Course.

Required Subjects.

Jurisdiction and Procedure in Equity.	Prof. Langdell.	Langdell's Cases on Equity Jurisdiction.	1	7
Partnership and Corporations.	Prof. Ames.	Ames's Cases on Partnership.	2	7

Elective Subjects.

Sales of Personal Property.	Prof. Thayer.	Langdell's Cases on Sales.	2	6
Bills of Exchange and Promissory Notes.	Prof. Ames.	Ames's Cases on Bills and Notes.	2	6
Conflict of Laws.	Prof. Gray.	No text-book.	1	4
Constitutional Law.	Prof. Thayer.	No text-book.	1	4
Agency and Carriers.	Prof. Thayer.	No text-book.	1	7
Wills and Administration.	Prof. Gray.	No text-book.	1	4
Jurisprudence.	Prof. Gray.	Austin on Jurisprudence.	1	8

Ordinary Course.

Elective Subjects.

Jurisdiction and Procedure in Equity.	Prof. Langdell.	Langdell's Cases on Equity Jurisdiction.	1	8
Partnership and Corporations.	Prof. Ames.	Ames's Cases on Partnership.	2	14
Sales of Personal Property.	Prof. Thayer.	Langdell's Cases on Sales.	2	6
Bills of Exchange and Promissory Notes.	Prof. Ames.	Ames's Cases on Bills and Notes.	2	4
Conflict of Laws.	Prof. Gray.	No text-book.	1*	4
Constitutional Law.	Prof. Thayer.	No text-book.	1†	5
Agency and Carriers.	Prof. Thayer.	No text-book.	1	14
Wills and Administration.	Prof. Gray.	No text-book.	1	20
Jurisprudence.	Prof. Gray.	Austin on Jurisprudence.	1	8
Evidence.	Prof. Thayer.	No text-book.	2	1
Trusts and Mortgages.	Prof. Ames.	Ames's Cases on Trusts	2	1

* For the first half of the year.

† For the last half of the year.

Studies.	Instructors.	Text-books.	Exercises per week.	Number of students examined.
FIRST YEAR.				
Real Property.	Prof. Gray.	No text-book.	2	45
Contracts.	Prof. Langdell.	Langdell's Cases on Contracts.	3	46
Torts.	Mr. Howland.	Ames's Cases on Torts.	3	45
Criminal Law and Criminal Procedure.	Prof. Thayer.	No text-book.	1	43
Civil Procedure at Common Law.	Prof. Ames.	Ames's Cases on Pleading.	1	40
SECOND YEAR.				
HONOR COURSE.				
Evidence.	Prof. Thayer.	No text-book.	2	39
Jurisdiction and Procedure in Equity.	Prof. Langdell.	Langdell's Cases in Equity Pleading.	2	39
Property.	Prof. Gray.	No text-book.	2	39
Trusts and Mortgages.	Prof. Ames.	Ames's Cases on Trusts.	2	39
ORDINARY COURSE.				
Elective Subjects.				
Evidence.	Prof. Thayer.	No text-book.	2	15
Jurisdiction and Procedure in Equity.	Prof. Langdell.	Langdell's Cases in Equity Pleading.	2	4
Property.	Prof. Gray.	No text-book.	2	16
Trusts and Mortgages.	Prof. Ames.	Ames's Cases on Trusts.	2	16
Sales of Personal Property.	Prof. Thayer.	Langdell's Cases on Sales.	2	11
Bills of Exchange and Promissory Notes.	Prof. Ames.	Ames's Cases on Bills and Notes.	2	11

THIRD YEAR.

HONOR COURSE.

Required Subjects.

Jurisdiction and Procedure in Equity.	Prof. Langdell.	Langdell's Cases on Equity Jurisdiction.	1	7
Partnership and Corporations.	Prof. Ames.	Ames's Cases on Partnership.	2	7

Elective Subjects.

Sales of Personal Property.	Prof. Thayer.	Langdell's Cases on Sales.	2	6
Bills of Exchange and Promissory Notes.	Prof. Ames.	Ames's Cases on Bills and Notes.	2	6
Conflict of Laws.	Prof. Gray.	No text-book.	1	4
Constitutional Law.	Prof. Thayer.	No text-book.	1	4
Agency and Carriers.	Prof. Thayer.	No text-book.	1	7
Wills and Administration.	Prof. Gray.	No text-book.	1	4
Jurisprudence.	Prof. Gray.	Austin on Jurisprudence.	1	8

ORDINARY COURSE.

Elective Subjects.

Jurisdiction and Procedure in Equity.	Prof. Langdell.	Langdell's Cases on Equity Jurisdiction.	1	8
Partnership and Corporations.	Prof. Ames.	Ames's Cases on Partnership.	2	14
Sales of Personal Property.	Prof. Thayer.	Langdell's Cases on Sales.	2	6
Bills of Exchange and Promissory Notes.	Prof. Ames.	Ames's Cases on Bills and Notes.	2	4
Conflict of Laws.	Prof. Gray.	No text-book.	1*	4
Constitutional Law.	Prof. Thayer.	No text-book.	1†	5
Agency and Carriers.	Prof. Thayer.	No text-book.	1	14
Wills and Administration.	Prof. Gray.	No text-book.	1	20
Jurisprudence.	Prof. Gray.	Austin on Jurisprudence.	1	8
Evidence.	Prof. Thayer.	No text-book.	2	1
Trusts and Mortgages.	Prof. Ames.	Ames's Cases on Trusts	2	1

* For the first half of the year.

† For the last half of the year.

for a degree in the studies of any year without having been members of the School during that year: —

	1877-78.			1878-79.			1879-80.			1880-81.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year . .	5	2	3	3	2	1	6	4	2	6	4	2
Second Year .							1	1				
Third Year .							5	4	1	4	4	

The following table exhibits the results of the examinations for the honor degree in each year since it was established: —

	1878-79.			1879-80.			1880-81.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
Second Year .	26	12	14	17	7	10	39	16	23
Third year . .				9	7	2		8	2

The following table exhibits the number of students who have entered the School in each year during the last eleven years, and shows how many of them were graduates of colleges, and, of the latter, how many were graduates of Harvard and how many of other colleges.

	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.
Whole number of entries	105	92	87	95	102	119	128	111	102	124	91
Graduates of colleges . .	60	56	47	58	55	67	77	79	62	76	60
Harvard graduates . . .	19	26	22	29	40	39	47	47	38	59	41
Graduates of other colleges	41	30	25	29	15	28	30	32	24	17	19
Non-graduates	45	36	40	37	47	52	51	32	40	48	31

The three years' course cannot yet be pronounced an entire success. It is true that another strong measure went into operation at the same time as the three years' course, namely, the examination for admission; but the latter, while it has reduced largely the number of candidates for a degree, has not reduced the total numbers of the School so much as it was expected to do; a large number of those who, but for the examination for admission, would have entered as candidates for a degree, having entered as special students. It is also true that there has not been a great falling off in the number of new men entering the School in each year, especially if it be borne in mind that the number of new entries, during the two years preceding the date when the three years' course went into operation (September, 1877), was abnormally large. In other words, it does not appear that the three years' course has prevented any considerable number of men from entering the School. I say it does not appear; for it must be admitted that the number of Harvard graduates entering the School within the last few years has been anomalous and unsatisfactory; but we have no evidence that this state of things is chargeable to the three years' course. For many years the number of Harvard graduates entering the School in each year averaged little more than twenty; and the number remained unchanged after the College classes had increased greatly in numbers. In 1873–74 the number went up to twenty-nine; in 1874–75 it went up to forty; in 1876–77 it went up to forty-seven; and it was the same in 1877–78, being the first year that the three years' course was in operation. The next year the number dropped to thirty-eight, but in 1879–80 it went up to fifty-nine. In the year under review, however, it dropped again to forty-one, and during the now current year the number thus far does not reach thirty. Since the three years' course went into operation, therefore, the number of Harvard graduates entering the School has varied from the lowest in several years to the highest that we have ever had. No clear explanation of this phenomenon has yet been discovered. There is no evidence that the three years' course has anything to do with it. Perhaps the most probable explanation is, that a smaller proportion than usual of the last two College classes has studied Law. Whatever the explanation may be, the falling off in Harvard graduates during the last two years has affected the School very materially. But for that, the number of new entries would have been entirely satisfactory, and the total number in the School would in all probability be greater at this moment than ever before.

There is, however, another test by which the success of the three years' course may be tried, namely, the ratio between those who enter the School as candidates for a degree and those who complete the course; and tried by this test the success has not been great. Thus, the first class that took the three years' course numbered, when it entered, — that is, when the catalogue was issued, — seventy-two, and three more entered the class subsequently, thus making the total number of men belonging to the class at any time seventy-five. Of these, only fifty entered the second year, and only twenty entered the third year. The number of candidates for a degree at the end of the third year was twenty-one, including five who were not in the School during the third year, but who returned at the end of the year to be examined. The second class that took the three years' course numbered in all sixty-five men. Of these, only thirty-two entered the second year, and only thirteen entered the third year. The number of candidates for a degree at the end of the third year was sixteen, including three who had not been in the School during the year. The third class that has taken the three years' course (and which is now in its third year) has numbered in all eighty-two men. Of these, fifty-seven entered the second year, and twenty-four entered the third year and are now in the School. Of course, this falling off is not wholly chargeable to the three years' course. Every class is expected to lose more or less of its members, during its course, from what may be termed natural causes; and in the Law School the annual examinations cause a material loss of numbers to every class. Still, after all deductions have been made, a large part of the falling off in the three classes just referred to must be attributed to the three years' course.

It was fully expected, when the three years' course and the examination for admission were established, that their combined effect would be to reduce largely for a time the number of students in the School; but how great this effect would be, which of these measures would have the most agency in producing it, and in what particular way it would be produced, could not of course be foretold with any certainty. In some respects the expectations which were formed have not been justified by experience. For example, the number who pass the examination for admission is much smaller than was anticipated; but, on the other hand, the number who enter as special students is much larger than was anticipated. So, in regard to the three years' course: it was expected to deter men from entering the School rather than to cause them to leave before completing the course; and it was hoped that a third-year class would compensate largely for the falling off in the number of new entries. In a word, it was not anticipated that these two measures would have their greatest effect in reducing the ratio of those who take the degree to the whole number who enter the School. Such, however, is the result of our experience thus far. It is our degree, therefore, if anything, that is in immediate danger; for, while a degree like ours is most likely to be injured by being made too easy of attainment, it may be injured by being made too difficult of attainment, or rather by reducing too much the proportional number of those who take it. The latter is our present danger. What, then, is the nature of the remedy to be applied? If our present standard is higher than it ought to be, the true remedy is to lower it; but if it is not, the true remedy is to take such measures, if possible, as will bring the standard of the School up to the standard prescribed for the degree. The latter is believed to be the true view, as well as the view of all or nearly all of those who have a voice in the question. What measures, then, can be taken to raise the standard of the School, — in other words, to cause a larger proportional number of students to enter as candidates for the degree and to complete the course? In regard to students entering as candidates for a degree, it depends upon the student's preliminary education; and I am not aware that we can do any more than we have done to raise the standard of that. The rest must be left to time. In regard to the three years' course, however, two measures might be taken which would lend it a powerful support; but unfortunately they both require money. One of these is an increase in the amount of instruction offered; the other is the establishment of several scholarships for the support of such students of high promise as are unable to bear the heavy expense of a three years' course in the Law School.

In respect to its teaching force, the Law School has been peculiarly unfortunate since the establishment of the three years' course. For many years prior to 1870 all the teaching in the School was done by three professors; but then the whole School constituted in effect but one class, all the instruction being given to the whole School indiscriminately, every student being expected to receive it all. It is true there was, in a sense, a two years' course, that is, the instruction given embraced a range of subjects which was designed to occupy the student two years; but as this course was only taught once in two years, that is, half of it in each year, it did not at all affect the amount of instruction given in any year. In 1870 measures were taken for dividing the School into classes, and accordingly the entire course was taught every year. This made an increase of the teaching force necessary, but it was made by means of lecturers temporarily employed. This state of things continued until 1873, when for the first time an assistant professor was appointed. This appointment increased the teaching force of the School largely at a small expense, as the assistant professor did the full work of a full professor from the beginning, while he received only half of a full professor's salary. Two years later, in 1875, the resources of the School having increased, a new professorship was created, and a new professor appointed to fill it. This gave us four full professors and an assistant professor, and yet we had only a two years' course. Accordingly, more instruction was given than any student was required to take; in other words, an elective system was introduced to some extent. During the year following the establishment of the new professorship, the Faculty voted to establish a three years' course and an examination for admission, both to take effect in September, 1877. About the same time the senior professor of the School, Professor Emory Washburn, resigned, his resignation taking effect in September, 1876. If everything which has since happened could then have been foreseen, it might perhaps have been thought best to leave this professorship vacant for a time; for, on the one hand, the school could have got on very well with four professors until there should be a third-year class, while, on the other hand, there was the certainty of our needing additional teaching force in three years, that is, as soon as we should have a third-year class, with a probable material diminution in our means of paying for it. However, an opportunity offered to make a brilliant and attractive appointment, — one also which was urged by a strong and unanimous public opinion in the legal profession of Boston, — and accordingly the vacancy was filled immediately. Before the year was out the assistant professor resigned, and to secure his services permanently it became necessary to appoint him to a full professorship. His new appointment took effect in September, 1877, that is, at the same time that the three years' course and the examination for admission went into operation. Thus, at that date the School had five full professors at an annual expense of $22,500 for salaries. This state of things continued for two years, during which time there were only two classes to be taught; and during the last of these years, there being no graduating class in the school, our expenses exceeded our income by more than $4,500. At the end of these two years the professor who had succeeded Professor Washburn resigned. It had then become evident that our numbers were to be materially reduced, and, at the same time, the income of the school from invested property had greatly fallen off in consequence of the long-continued depression in business. Consequently, the Faculty were informed by the Corporation that the school could not afford the appointment of a new professor, or even of an assistant professor, and that the four remaining professors must undertake the instruction of three classes, with the assistance perhaps of a lecturer, who would take one course. Accordingly, this programme was carried out, and ever since we began to have a third-year class all the instruction has been given by four professors, with the exception of the subject of Torts, which has been taught by a lecturer. Merely to say, however, that these four professors and one lecturer have been required to instruct three distinct classes, each of them pursuing separate subjects, is not to state the case in its full strength. If that were all, there would be little ground of complaint as regards the amount of instruction given, at least on the part of the students and the public; for there are twenty-nine hours of instruction given every week, and it is conceded that ten hours constitute full work for a student. Indeed, prior to 1870 the instruction given had never exceeded ten hours per week, though there were three full professors. In order to understand the present situation, therefore, it is necessary to bear in mind that for several years before the three years' course came into full operation an elective system had to some extent become a feature of the School, and the students had become accustomed to having some choice in their studies, and expected it. Moreover, in a three years' course it was found necessary to teach some subjects which it would not be reasonable to require every student to take. It was found necessary, therefore, to provide a certain number of electives, notwithstanding the lengthening of the course. Yet, with the present teaching force of the school, there was but one way of providing them, namely, by reducing the amount of work required of each student. Accordingly, certain subjects were made elective, and less than full work was required of any student during the second and third years. It was hoped that this would not be unacceptable nor even unprofitable to the students, as it would leave a certain amount of time at their own disposal, and thus enable them, in the latter part of their course, to cultivate the habit of legal investigation without the aid or guidance of a teacher. The students, however, seem not to have taken this view; but rather to have thought that it was possible to crowd the bulk of the work of three years into two years, and thus to save an entire year in time and expense, without any material loss, and that this saving was an object worth struggling for. Indeed, there is reason to believe that this has been with some an object not merely of economy, but of ambition. Certain it is that this object has been pursued by some of the most ambitious men in the School, who could well afford both the time and expense of three years' study. That the supposed possibility of gaining all the substantial advantages that the School has to offer in two years instead of three is a sore temptation to the great majority of students in point of economy, ought to excite no one's surprise; and this leads me to the consideration of the second measure above suggested as a means of supporting the three years' course, namely, the establishment of scholarships.

It is impossible to consider such a measure without being reminded of the difficulty of getting the money and the time necessary for systematic and thorough professional education. Those who have the money are not willing to give the time, and those who have not the money cannot get it for that purpose. This is particularly true of Law and Medicine, Theology standing upon grounds peculiar to itself. It is also believed to be specially characteristic of English-speaking countries, and to arise from the long habit, in those countries, of sacrificing professional education to academic or collegiate education. This habit had its origin in England. It is a well-known fact that the English Universities long since ceased to be universities in the true sense of the term, and became mere associations of colleges, each college devoting itself wholly to the instruction of undergraduates, that is, to candidates for the degree of Bachelor of Arts; so that this degree, instead of being preliminary merely to a doctor's or a master's degree in some one of the recognized departments of learning, became in effect the only degree given. Hence, the idea was assiduously cultivated and propagated by those institutions, that those studies which lead to the degree of Bachelor of Arts are the only liberal studies, the only studies worthy to be pursued for their own sake or to be taught in an institution of learning, and the only studies which the public is interested in promoting; that when one receives the degree of Bachelor of Arts, his liberal education is completed; that it is one of the functions of a liberal education to give the student such a training as will enable him to master any subject without instruction in it, and that a liberal education renders all further instruction in any subject unnecessary, if not superfluous; that a Bachelor of Arts is prepared to "go out into the world," and engage in the business of life, whatever that may be; that professional learning or professional knowledge (as it would rather be called) is a thing to be "picked up" by degrees, and acquired by experience and practice, like the knowledge of any ordinary business or pursuit; that one's professional eminence will depend (*ceteris paribus*) upon his academic education and upon his opportunities for practising his profession, rather than upon the amount of time and labor that he devotes to regular and systematic professional study; that professional learning is pursued solely for the profits and emoluments which it brings, and that these will cause it to be pursued with sufficient eagerness; that the public has no interest in increasing the number of lawyers and doctors, and, though it has an interest in improving their quality, yet that object, so far as it depends upon professional study, will be best secured by the principle of competition. These ideas have been inherited by American colleges, and have been as assiduously cultivated by them as by their English prototypes. Moreover, both the English and the American colleges have accomplished their object so successfully that money has seldom been given in either country, whether by the State or by individuals, for the promotion of legal or medical education. If I am correctly informed, in all the long list of benefactors of this University, extending through near two centuries and a half, only four persons will be found, namely, Isaac Royall, Nathan Dane, Benjamin Bussey, and George Bemis, who have given money with the object of promoting legal education; and not a dollar has ever been given by any one towards furnishing pecuniary aid to students in the Law School. In this latter respect the College presents a contrast which is sufficiently striking; for it appears by the Catalogue for the current year that no less than one hundred and twenty scholarships, varying in their annual income from forty dollars to three hundred and fifty dollars, have been established in the College which are actually available, besides several which are not yet available. Besides these, it appears that the College has an annual income of about two thousand dollars which is given to students, and an annual income of nearly three thousand dollars which is lent to students. Altogether the gifts made to the College for the purpose of furnishing pecuniary aid to undergraduates have been so munificent as to warrant the statement in the Catalogue that good scholars of high character but slender means are seldom or never obliged to leave College for want of money.

The prevalence of such ideas in regard to professional education has had even a worse effect in this country than in England, so far at least as regards the legal profession, and that chiefly for two reasons: First, the English colleges have within their gift a large number of fellowships, mostly of ancient foundation, for which graduates alone are eligible; and although few if any of them were founded with any view of promoting legal education, many if not most of them are available for the support of the holders of them while studying law; and to these fellowships the English bench and bar have been indebted for many of their brightest ornaments. In this country, it is believed, there is no analogous provision whatever of which a student of law can avail himself, even as a reward for undergraduate study. There are, indeed, in this University seven fellowships, all recently established, the income of which furnishes a liberal support to their respective holders; but not one of them was established for the promotion of professional study, and not one of them is available for a student in the Law School. Secondly, although in England the State has done little or nothing directly for legal education, it has done much for the legal profession. Indeed, it is doubtful if ever, in any country, any profession has occupied a position so exalted as the higher branch of the legal profession in England.

In consequence of a very highly centralized judicial system, and in consequence of the profession being divided by law into two branches (counsel and attorneys), all the members of the higher branch, at least with few exceptions, reside in the metropolis and form a large, compact, distinguished, and influential body of men, inheriting great traditions, endowed with great privileges, and clothed with great powers, — with the power, among others, of determining, without appeal, what new members shall be admitted into the body, and whether existing members shall remain in it, and upon what terms. I say without appeal; for, though the judges have a visitorial power over the body, yet the judges are all taken from the body and continue to be members of it. Every member of this body, on the one hand, feels the influence, shares the advantages, and enjoys the support and protection of the entire body, and, on the other hand, has all the members of the body to compete with; and upon those who succeed in struggling to the front the State showers its honors and rewards to an extent absolutely unprecedented. Under such a system, legal education will take care of itself in a great measure, at least so far as the interests of the public are concerned. In this country, on the other hand, the State has, upon the whole, done its best to reduce the legal profession to the level of an ordinary pursuit; it has neither done anything for it, nor permitted it as a body to do anything for itself. The profession does not constitute one organized body at all; and if it can be said to have any organized bodies within it, they are of the slightest and feeblest description, and do not embrace respectively more than a single city or county. It is true that judges are taken from the legal profession; but that is from the necessity of the case; and it is scarcely too much to say that no effort has been wanting to strip the judicial office of its traditional honors and emoluments. If any one desires to compare the condition of the profession in this country and in England, it may be said that it is here what it would become in England if the institution of barristers should be suddenly abolished, and it should be provided that henceforth every attorney should, *virtute officii*, also be a barrister; and if the courts, instead of sitting constantly in the metropolis and administering justice for every part of the kingdom indiscriminately, should become itinerant, travelling from county to county and administering within each county separately the justice pertaining to that county.

A profession so situated has no means of elevating itself, because it has no means of raising the professional standard. Individual members may do something by precept and example, but the influence of good men in that direction is always liable to be counteracted by the influence of bad men in an opposite direction. The only sure way of raising the professional standard is by raising the standard of legal attainments, education, and character in the men by whom the profession is recruited, or at least in the better class of them.

It may not be amiss to notice two or three of the most plausible arguments against the claims of professional, and especially legal, education to pecuniary encouragement and support. First, it is said that young men study law for their own advancement in life, and not with any view to serving the public, and that the attractions of the profession are so great that too many, rather than too few, enter it; and hence it neither deserves nor needs any pecuniary support from the public. It is true that there are lawyers enough; but they are not good enough; and to make them better is as difficult a task as any that educators have to perform. In some branches of study the difficulty is to obtain students; in law there are students enough, but the difficulty is to induce them to study anything of which they cannot make a direct application in practice; and it is hard to say which is the greater difficulty of the two. To the specific argument that there are too many lawyers already, and that the interest of the public lies in reducing their number, the answer is, that the best possible way of accomplishing this latter object is to raise the standard of legal education. The lower this standard is the more numerous will lawyers be, and *vice versa*. Secondly, it is sometimes said that a young man who has received a good college education ought to be able to make his own way. This argument either assumes the popular view of legal education to be the correct one, or it overlooks the great changes which have taken place within the last fifty years. The standard of college education has been so much raised that young men graduate from college now two or three years later in life than they did fifty years ago, and the expenses of living have much more than doubled since that time. On the other hand, the ability of young men to earn money by temporary pursuits, if it has increased at all, has not increased in anything like the same proportion. The change is illustrated by the fact that it was common at Harvard College fifty years ago for young men partly to earn their way through college by teaching school during the winter. Now, they can earn more money by working for college rank, and thus obtaining scholarships. The plain truth is, that it is in most cases impracticable for young men who have already taxed their resources to the utmost in obtaining a college education, to take a three years' course in the Law School, if they must earn the money to pay all their expenses. Thirdly, it is a common notion that the callings of professional men are of a commonplace, humdrum nature, and therefore are no more entitled to support from the public than most other callings which men follow for the purpose of gaining a livelihood. In other words, it is said that professional men do not labor for the advancement of science and learning. It is apparently upon this theory that students in the professional schools are excluded from all of the fellowships which have been recently established in the University for the benefit of graduates. Upon this subject there is a great deal of delusion, at least so far as law is concerned. That law is not only a science, but one of the greatest and noblest of sciences, there is and can be no dispute. That it is a science with which the most vital interests of the public and the State are closely bound up, is equally beyond dispute. It is also true that a knowledge of this science, in all its length and breadth, is or ought to be the object of every ambitious lawyer. But it will be said that in fact very few lawyers care anything for a knowledge of law as a science; that such knowledge is not necessary for professional success; that in fact the most successful lawyers are willing to take the law as laid down by the courts, without troubling themselves about the reasons or principles upon which it is founded. It must be confessed that there is some truth in this statement, and the argument founded upon it would have some weight if there were a class of men, separate and distinct from practising lawyers, who devoted themselves to the cultivation of law as a science; but there is no such class either in this or in any other English-speaking country, nor is there the least probability that there will be such a class within any period of time to which it is worth while to look forward. As it is now and always has been, whatever may be said of the short-comings of lawyers, they are the only class of men among us who have any knowledge of law as a science. They are the only material out of which judges or professors of law can be made. For example, there has never been a professor in this School who had not either practised law or studied with a view to doing so. Moreover, it is neither practicable nor desirable to have two systems of legal education, one for those who intend to be lawyers, and another for those who wish to study law as a science. The latter would, indeed, have no occasion to go into a lawyer's office; but so far as education in a law school is concerned, there is no occasion for making a distinction between the two classes. A law school which does not profess and endeavor to teach law as a science has no reason for existence. Surely it ought not to be said of this School that its aims are not sufficiently high to entitle it to pecuniary support, since it has suffered seriously in its material interests from a charge of being too scientific in its aims, too theoretical, and too little practical. Any one, therefore, who wishes to promote the study of law as a science will best accomplish his object by wisely promoting its study as a profession; and any attempt to accomplish such an object by divorcing the study of law as a science from its study as a profession is doomed to fail.

It only remains to show that the establishment of scholarships would be an efficient aid to the Law School in accomplishing its object of raising the standard of legal education. The specific object of the School, in procuring the establishment of scholarships, is to enable it to draw annually from the different colleges a few of their ablest and most promising men, whom it now has no chance of obtaining. The great value of a few such men added to the School would consist partly in the influence that they would have upon the School itself, and partly in the increased reputation that they would soon give the School throughout the country. The influence that they would have in the School would be of great, immediate, and certain value. Individual students in such a School are governed largely in their opinions and actions by what may be called the public opinion of the School, and in forming this opinion a few of the most prominent students are chiefly influential. If, for example, the ten most prominent men in each class should remain in the School three years and take a degree, there is no doubt that the others would soon follow their example, so far as circumstances permitted, and the success of the three years' course would thus be complete. So, if five out of the ten ablest men in each class had scholarships, and the other five had ample means, as the former would be sure to remain through the course and take their degree, the latter would do so also; for the ten would be each other's rivals, and able and ambitious men of means will never permit their rivals without means to enjoy better educational advantages than themselves.

It must also be remembered that the Law School can only accomplish its objects fully by means of students of high grade, and that the supply of such students is very limited in number at best; and if from this limited number must be subtracted all those who, having already incurred the expense of a good college education, cannot afford the heavy additional expense of three years in the Law School, the number from which the .School can draw will be small indeed.

Whether any one will be found who has both the means and the will to devote a moderate sum of money to the purpose that I have indicated, I do not know. Perhaps no one but a member of the legal profession can be expected to take sufficient interest in the subject; but to any lawyer who has achieved fame and fortune, and who wishes to discharge in a liberal spirit the debt which every successful lawyer is said to owe to his profession, I should think no more attractive scheme could be suggested than that of establishing scholarships in the Law School. By devoting money to such an object, one can serve the public in the most attractive of all ways, namely, by conferring signal benefits upon a perpetual succession of worthy individuals. It is much the fashion to give money to institutions of learning for the erection of buildings; and if one wishes to serve the public by erecting a visible memorial of a family or a friend, such a memorial can certainly take no better form than that of a handsome building devoted to the interests of sound learning. Still, it is possible to overestimate the value of a building as a memorial. Like most of the physical works of men, buildings are destroyed by time, or rendered unfit for their original uses; and in this country of rapid changes time does its work in these respects with great rapidity. Then, one who takes the security of a visible memorial must trust to that alone. As individuals are not the objects of his bounty, he does not earn the gratitude of living men in successive generations who will be interested to keep his memory green. To be sure, his name will be perpetuated so long as his monument endures, but he has no security that he himself will be affectionately remembered. The man who founds scholarships may well say to him who puts his money into costly buildings: "Exegi monumentum aere perennius."

C. C. LANGDELL, *Dean.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — As Dean of the Medical Faculty, I submit the following report upon the Medical School for the academic year 1880–81: —

The whole number of students in attendance during the year was two hundred and fifty-one; during the first term two hundred and forty-five; during the second two hundred and forty. Of these, one hundred and twenty had a literary or scientific degree. There were eighty-five applicants for the degree of Doctor of Medicine, of whom twenty-five were rejected. Sixty passed the examination and received their degrees.

The Scholarships were awarded to Charles Goddard Stearns and George Clarence Shepard of the Third Class and to Alton Atwell Jackson and John Abbott Crosby of the Second Class. As Mr. Shepard left during the first term on account of illness, the Scholarship was given to John Walter Baker for the second term.

The results of the Fourth-year course require separate mention. The class was composed of ten students, of whom five received hospital appointments; one took the ordinary degree of M.D.; and four applied for the special degree intended for those who passed the examination of the fourth year; but as none of the four applicants fulfilled all the requirements, this degree was not awarded. The small size of the class should cause neither surprise nor disappointment. At the time the change was announced, the plans of the young men in the School had already been formed, and their studies had been arranged with reference to graduation at the end of three years. Moreover, the opportunities for entering the various hospitals attracted a number of the best students.

The results of this attempt to prolong the period of study cannot be determined for a number of years. If it is to succeed, the value of the additional instruction must be so manifest as to in-

COURSES OF INSTRUCTION FOR 1880-81.

Instructors.	Subjects.	Number of Exercises.
	FIRST CLASS.	
Prof. Holmes	Descriptive Anatomy	Four times a week till May.
Drs. Beach, Waterman, & M. H. Richardson	Practical Anatomy, with Exercises in Dissection	Fifteen times a week from November till May.
Drs. Dwight & Quincy	Laboratory Exercises in Histology	Twice a week till May.
Dr. C. S. Minot	Embryology	Twelve.
Prof. Bowditch	Systematic and Experimental Physiology	Four times a week.
Dr. Garland	Laboratory Exercises in Experimental Physiology	Twice a week for 5 weeks.
Dr. Hills	General and Analytical Chemistry	Twice a week, with ten additional exercises.
Dr. Hills	Practical Exercises in the Laboratory for General Chemistry	Daily.
	SECOND CLASS.	
Dr. Dwight	Topographical Anatomy	Once a week.
Drs. Beach, Waterman, & M. H. Richardson	Practical Anatomy, with Exercises in Dissection	Ten times a week till Jan.
Prof. Wood	Medical and Toxicological Chemistry	Twice a week.
Prof. Wood	Practical Exercises in the Laboratory for Medical Chemistry	Daily.
Dr. Bolles	Materia Medica, with Practical Demonstrations	Once a week.
Prof. Fitz	General Pathology and Pathological Anatomy	Twice a week.
Prof. Fitz	Special Pathological Anatomy, with Demonstrations	Twice a week.
Drs. Cutler & Whitney	Laboratory Exercises in Pathological Histology	Twice a week till April.
Prof. Fitz & Dr. Cutler	Practical Instruction in Performing Autopsies	Throughout the year.
Prof. Ellis	Clinical Medicine	Three times a week till May, with an additional weekly exercise during the first half-year.
Drs. Mason, Whittier, & Shattuck	Practical Instruction in Auscultation and Percussion	Daily during the first half-year.
Dr. Knight	Practical Diagnosis and Treatment of Diseases of the Larynx	Daily during the first half-year.
Dr. Warren	Recitations in Surgical Pathology	Once a week during the first half-year.
Dr. Warren	Recitations in Surgery	Once a week during the second half-year.
Dr. Warren	The Application of Bandages and Apparatus	Once a week during the second half-year.
Drs. Warren & W. S. Bigelow	Laboratory Exercises in Surgical Histology	Twice a week after Mar.
Prof. Bigelow	Clinical Surgery	Once a week till March.
Prof. Cheever	Clinical Surgery	Twice a week till April.
Dr. Porter	Clinical Surgery	Once a week after Feb.
	THIRD CLASS.	
Prof. Edes	Therapeutics	Three times a week.
Prof. Reynolds	Theory and Practice of Obstetrics	Twice a week.
Dr. W. L. Richardson	Recitations in the Theory and Practice of Obstetrics	Once a week.
Dr. W. L. Richardson	Practical Exercises in Operative Obstetrics	Twelve.
Dr. W. L. Richardson	Practical Instruction in Clinical Obstetrics	Throughout the year.
Prof. Minot	Theory and Practice of Physic	Five times a week.
Prof. Ellis	Clinical Medicine	Three times a week till May, with an additional weekly exercise during the first half-year.
Prof. Bigelow	Surgery and Clinical Surgery	Twice a week till March.
Prof. Cheever	Clinical Surgery	Twice a week till April.
Dr. Porter	Surgical Anatomy and Operative Surgery	Twice a week for two months.

COURSES OF INSTRUCTION — Continued.

Instructors.	Subjects.	Number of Exercises.
	THIRD CLASS — Continued.	
Drs. Porter & W. S. Bigelow	Practical Exercises in Operative Surgery	Twelve exercises of three hours each.
Prof. Williams	Diseases of the Eye	Once a week.
Prof. Williams	Clinical Ophthalmology	Once a week till January and after March.
Prof. White	Diseases of the Skin	Once a week.
Prof. White	Clinical Dermatology	Once a week.
Dr. Baker	Diseases of Women	Once a week.
Dr. Baker	Clinical Gynaecology	Twice a week till April.
Dr. Baker	Operative Gynaecology	Thirty-six practical exercises of one hour each.
Dr. Greenough	Practical Diagnosis and Treatment of Syphilis	Once a week during the first half-year.
Dr. Wigglesworth	Practical Diagnosis and Treatment of Syphilis	Once a week during the second half-year.
Dr. Green	Practical Diagnosis and Treatment of Diseases of the Ear	Once a week from January till April.
Dr. Blake	Anatomy, Physiology, and Diseases of the Ear	Twice a week for three months.
Dr. J. P. Oliver	Practical Diagnosis and Treatment of Diseases of Children	Once a week during the first half-year.
Dr. Rotch	Practical Diagnosis and Treatment of Diseases of Children	Once a week.
Dr. Webber	Practical Diagnosis and Treatment of Diseases of the Nervous System	Once a week till Feb.
Dr. J. J. Putnam	Practical Diagnosis and Treatment of Diseases of the Nervous System	Once a week.
Dr. Folsom	Mental Diseases	Eight, with occasional hospital visits.
Dr. Draper	Forensic Medicine, with Demonstrations	Twelve.
	FOURTH CLASS.	
Prof. Ellis	Clinical Medicine	Three times a week till Feb., and after March.
Prof. Edes	Clinical Medicine	Once a week after Feb.
Prof. Cheever and Dr. Warren.	Clinical Surgery	Twice a week till March.
Drs. Porter and W. S. Bigelow	Operative Surgery	Eight exercises of two hours each.
Dr. Bradford	Orthopedic Surgery	Twice a week for two months.
Prof. Reynolds	Obstetrics	Once a week.
Dr. W. L. Richardson	Clinical Obstetrics	Throughout the year.
Dr. W. L. Richardson	Operative Obstetrics	Fourteen exercises of two hours each.
Prof. Williams	Opththalmology	Once a week.
Prof. Williams	Clinical Ophthalmology	Twice a week for six months.
Dr. Wadsworth	Ophthalmoscopy	Five hours a week for two months.
Prof. White	Dermatology	Once a week.
Prof. White	Clinical Dermatology	Three times a week.
Dr. Baker	Gynaecology	Once a week.
Dr. Baker	Clinical Gynaecology	Four times a week.
Dr. Chadwick	Clinical Gynaecology	Three times a week after February.
Drs. Oliver & Rotch	Diseases of Children	Three times a week.
Drs. Webber & Putnam	Diseases of the Nervous System	Twice a week.
Dr. Folsom	Mental Diseases	Once a week after March.
Dr. Knight	Laryngology	Twice a week for two months.
Drs. Green & Blake	Otology	Twice a week for six months.
Drs. Greenough & Wigglesworth	Syphilis	Twice a week.
Dr. Curtis	Diseases of the Urinary Organs	Once a week for three months.
Miss Parloa	Cookery	Six exercises of two hours each.

duce those interested to avail themselves of it; the student must begin his studies with the idea of prolonging them, and must arrange them accordingly; and, as the hospitals must continue to demand their quota of assistants, these institutions must be satisfied that the services of young men who have studied four years are more valuable than those of students whose systematic instruction has terminated at the end of three. The attention paid to the second of these conditions already offers encouragement. In 1880–81, of sixty-nine matriculants, fourteen, or twenty per cent, announced their intention to take the additional course; while in 1881–82, of seventy-nine matriculants, twenty-four, or thirty per cent, announced a similar intention.

The table on pages 87, 88 shows the amount and character of the instruction given.

The results of the examinations for admission to the School under the additional requirements, as described in the catalogue, are given in the following table: —

	1877.				1878.				1879.				1880.				1881.			
	June.		Sept.		June.		Sept.		June.		Sept.		June.		Sept.		June.		Sept.	
	Offered.	Conditioned.	Offered.	Conditioned.	Offered.	Conditioned.	Offered.	Conditioned.	Offered.	Conditioned.	Offered.	Conditioned.	Offered.	Conditioned.	Offered.	Conditioned.	Offered.	Conditioned.	Offered.	Conditioned.
Physics	13	5	25	3	22	4	41	18	23	5	24	7	15	3	24	8	17	3	23	6
Latin	9	2	16	5	12	2	22	10	10	3	11	3	8	4	11	6	17	6	23	6
English	4	1	8	1	8	1	18	0	13	3	9	0	7	3	10	3	17	1	28	1
Elective	0	0	1	1	2	1	2	2	0	0	2	0	0	0	2	0	17	4	23	2
Total rejected	2		1		4		5		2		3		3		5		2		2	

In the following table will be found the statistics of rejections at the annual examinations of the School in June for the past four years.

JUNE EXAMINATIONS. — STATISTICS OF REJECTION.

		FIRST CLASS.						SECOND CLASS.						THIRD CLASS.													
		Anatomy.		Physiology.		General Chemistry.		Medical Chemistry.		Materia Medica.		Path. Anatomy.		Theory and Practice.		Clinical Medicine.		Surgery.		Clinical Surgery.		Therapeutics.		Obstetrics.	
			Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
1878	Passed	56		52		49		54		52		56		53		53		51		54		48		36	
	Rejected	17	23	25	32	14	22	8	12	13	20	11	16	3	5	7	11	0	0	0	0	4	7	21	36
	Total	73		77		63		62		65		67		56		60		51		54		52		57	
1879	Passed	73		59		33		64		57		59		56		64		58		60		57		51	
	Rejected	15	17	36	37	36	52	11	14	17	22	11	15	0	0	1	1	3	4	1	1	11	16	9	15
	Total	88		95		69		75		74		70		56		65		61		61		68		60	
1880	Passed	77		81		52		46		70		62		58		53		65		59		56		56	
	Rejected	15	16	27	25	15	22	11	19	13	15	11	15	9	13	10	15	1	1	11	15	13	18	9	13
	Total	92		108		67		57		83		73		67		63		66		70		69		65	
1881	Passed	58		42		37		70		69		77		74		67		73		77		82		66	
	Rejected	8	12	19	31	10	21	9	11	15	17	11	12	5	6	16	19	3	8	1	1	8	8	14	17
	Total	66		61		47		79		84		88		79		83		76		78		90		80	

FOURTH CLASS.

		Ophthalmology.		Dermatology.		Clinical & Operative Obs.		Gynaecology.		Diseases of Children.		Diseases of Nervous System.		Mental Diseases.		Laryngology.		Operative Surgery.		Otology.		Forensic Medicine.		Syphilis.	
1881	Passed	9		7		7		8		9		9		9		9		9		8		9		9	
	Rejected	0	0	2	22	2	22	1	11	0	0	0	0	0	0	0	0	0	0	1	11	0	0	0	0
	Total	9		9		9		9		9		9		9		9		9		9		9		9	

The continued recognization of the truth that Medicine should be studied where there are means for teaching it is shown in the appended table: —

NUMBER OF TERMS SPENT AT THE SCHOOL BY GRADUATES.

	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1860.	1881.
Spent six terms	8 5%	8	22	14 47%	25 69%	40 65%	41 85%	62 88%	39 86%	49 81%
Spent five terms	0	3	2	7	5 13%	9	4	2 2%	1 2%	6 10%
Spent four terms	8 14%	8	6	6	4 11%	8	8	3 4%	4 8%	4 6%
Spent three terms	18 32%	15	5	0	2 5%	1	0	2 2%	0	1 1%
Spent two terms	27 48%	7	3	3 10%	0	3	0	1 1	1 2%	0
Total graduated	56	41	38	30	36	61	48	70	45	60

After repeatedly referring in these reports to the difficulty under which the School labored owing to the character and situation of the building into which most of its instruction was necessarily compressed, it is most gratifying to announce that a second liberal and ready response to our appeal for pecuniary aid has enabled the Corporation to begin the construction of a suitable building, which is now far advanced.

CALVIN ELLIS, *Dean*.

To the President of the University:

Sir, — I beg leave to submit the following report upon the Dental School for the year 1880–81: —

The number of students was seventeen, of whom three were third-year, three second-year, and eleven first-year students.

The studies of the first-year class are the same as those of the same year in the Medical School, and our students attend lectures and other exercises with the Medical Class of that year, and pass with them the same examinations.

The studies were Anatomy, by lectures and dissection, Physiology and General Chemistry, including the work in the Chemical Laboratory. The students of the second and third year attended, as a part of their regular course, in connection with the Medical Classes, twelve lectures in Surgical Pathology, given by the Professor of Clinical Surgery, two lectures in Oral Surgery, and one on Anaesthesia and Anaesthetics, by the Professor of Surgery.

The Professor of Operative Dentistry has lectured one hour each week on the theory and practical methods of filling teeth, and the usual clinical instruction has been given by the instructors in the Out Patients' Department of the Massachusetts General Hospital, which has supplied abundant material. So great has been the number of patients desiring attention, that the small class of operating students have been entirely unable to attend to all. This is, however, an advantage to the students, inasmuch as a choice of operations is made possible, and greater individual attention can be given by the instructors.

On each of five afternoons of every week during the academic year the Demonstrator and one of the instructors have been present in the Infirmary to give oversight to the work of the students, and such assistance as occasion called for. Clinics have also been given whenever opportunity served.

In the department of Mechanical Dentistry the Professor has devoted two hours or more of each week, one to lectures on theory and practice, and one to clinical instruction in the Laboratory. The Demonstrator has attended from nine o'clock till noon, for clinical teaching and aid to the students when aid was required, every day during the term, except Saturday and Sunday. Patients have been abundant, and opportunities have not been wanting for the diligent student to practise every branch of this department.

Dr. Manning K. Rand, Demonstrator of Operative Dentistry, and Dr. George F. Grant, Demonstrator of Mechanical Dentistry, both graduates of the School, have performed their duties with exemplary fidelity and success. Dr. Rand has felt compelled, by stress of other duties, to resign the position in which he gave so much satisfaction.

Dr. Charles Sedgwick Minot, Instructor in Oral Surgery and Pathology, has given three hours of every week to the instruction in his department. He has devoted much time to the careful training of the students in the use of the microscope and the preparation of sections. He reports to me as follows: —

"In the course on Oral Pathology and Surgery several changes were made, the most important being the addition of one morning's work in the Laboratory every week throughout the year. The object of this was to familiarize the students with the details of Dental Anatomy and Pathology, and the methods of preparation. Although the deficiencies of the Laboratory formed a very serious obstacle to rendering the course satisfactory, yet it is believed to have been of marked profit to the students, and therefore it appears eminently desirable to continue it. To do so properly requires the purchase of a supply of microscopes and other appliances, and also a small yearly appropriation. The cataloguing of the collection was completed by Dr. A. T. Cabot and Dr. Minot, and the latter also arranged and catalogued the microscopic preparations belonging to the School. Extensive additions to these last are a pressing necessity for the purposes of demonstration to the students."

Dr. Brackett, Assistant Professor in Dental Therapeutics, reports that he has given thirty-two hours' instruction in his department, devoting the first ten minutes of each interview to a recitation on the prominent points in the preceding lecture, and asserts that with each succeeding year he becomes more and more satisfied of the great value of such a recitation in fixing the instruction given. Dr. Brackett, in his instruction, makes use of a valuable collection of drugs and materials used in his specialty, which he has presented to the School.

The graduating class consisted of five.

Attention has been frequently called to the pressing pecuniary needs of the School, and early in the year an attempt was made to obtain from the generously inclined of the community a small sum to enable the School to pay off its debt and obtain quarters in the new medical building now being erected. A committee was formed to solicit subscriptions, consisting of the professors and instructors of the School. These men, who were already giving about one twelfth of their working hours to the School without compensation, found it impossible to take more of their time from their business, and impracticable to accomplish anything by evening calls; therefore this subscription has been practically dropped, and some other method must be adopted, if anything is to be accomplished in this direction. At the last meeting of the Alumni of the School, however, an attempt was made to interest the graduates of the School in the matter, and a paper was signed on the spot by thirteen of their number, agreeing to give to the fund one hundred dollars each in five years, or twenty dollars each year. This number has already been increased, and more will probably be added as their attention is called to the subject. If it were fairly understood by the community that not only a School of Dentistry, but a Dental Infirmary, averaging eight thousand cases each year, depended upon the gratuitous services of half a dozen men, any one or all of whom may at any moment grow weary of the burden imposed upon them, it does not seem that this condition of things would be allowed to continue.

THOMAS H. CHANDLER, *Dean.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I have the honor to submit the following report upon the Lawrence Scientific School for the academic year 1880–81: —

The number of students registered during the year was forty-one. They were classified as follows: Four in Engineering, five in Natural History, one in Mathematics, thirty-one in special courses.

It would be difficult to state in detail all the courses of study pursued, without giving a complete tabular view; but its variety is shown in the fact that these pupils attended the instruction of fifty different teachers, — some of them attending only College courses. This year has shown also that more College undergraduates desire to make use of the advantages offered by the Scientific School; and, in view of the close connection which now exists between the School and the University, the question arises whether more courses of the School should not be included in the elective courses of the College. For instance, every year we have undergraduates receiving instruction in mechanical drawing. They take this work as an "extra," and, although it occupies their time, they get no credit for it in the scale of College marks. To the majority of graduates a knowledge of mechanical drawing would be of more use than the moderate skill in free-hand drawing which they are likely to attain. Yet the latter is accepted as an elective, while the former must be taken as an extra.

Last year we had seventeen pupils; this year we have nearly two and a half times as many. The principal if not the only cause for this increase seems to lie in the definite statement in the catalogue that persons could enter, without examination, as special pupils, and take any courses in the University for which they were found competent. But this sudden and great increase in the number of special students makes it a matter of interest to inquire into the kind of material of which this body of students is composed. A careful examination of the records shows that they may be fairly divided into the following classes: First, those who are unable or unwilling to prepare themselves for the entrance examinations, and yet are desirous of pursuing certain definite courses of study; secondly, those who cannot now pass all the entrance examinations, but will be able at the end of a year to pass those examinations, and also the annuals in many of the regular studies of the first year in the course selected, and thus enter as regular students; thirdly, those who wish to have some kind of connection with the University, but cannot enter as unmatriculated students of the College on account of the disqualification of age.

In the first class we find some of our most desirable pupils. They are persons who, for various reasons, have been out of the habit of study for years, and now find themselves in a condition to complete or supplement their earlier education. They come with a definite purpose, and they do good work. Many of this class also are graduates of other institutions, and come here to complete courses of study begun there. Some of them are finally advanced to regular standing, and take their degree in course, while others become candidates for the higher degrees.

In the second class we always have several pupils. Instead of spending a year in mere preparation for the entrance examinations, or to make up their deficiencies, they enter at once as special students, take private instruction if needed, elect many of the courses of the first year, and at the end of the year are admitted as regular pupils with advanced standing, with perhaps several conditions. In some respects this method of entrance is a gain both to the pupil and to the University. In his one year of probation he has become familiarized with the methods of teaching, and has learned to appreciate what he is losing in his position of special student. He wishes to get a degree, and he is ready to work for it. He is better qualified to select the department in which he will graduate, and he is better prepared for that department, than he would have been by one year's tuition outside of the University.

The third class contains those pupils with whom it is most difficult to deal. In the College, if a student does not come up to the required standard, he is dropped to a lower class; but these students are not classified in the Scientific School; and the only mode of dealing with a negligent student is to notify his parents that their son is wasting his time, and ask them to remove him from the University. It is understood that the College has recently done away with the restriction of age as regards unmatriculated students, and therefore the Scientific School will probably not be resorted to in future by this class of persons. They will naturally go to the College, and come under its discipline.

Two degrees were conferred at Commencement, — one in Engineering, and one in Natural History.

H. L. EUSTIS, *Dean.*

To the President of the University:

Sir, — As Director of the Botanic Garden, I have the honor to present the following report for the academic year 1880–81: —

The drought to which I referred in my last annual report was broken by abundant rains in the autumn. The damage caused by the drought to our biennials and perennials was materially lessened, as in case of the annuals, by the great watchfulness and care exercised by the gardener, Mr. Wm. Falconer, and most of the losses have been made good by plants newly raised from seed. It is feared, however, that some of the woody plants, especially our pines on Garden Street, have suffered irreparable injury. During the past year, rather more than the usual amount of rain has fallen, and the thrifty condition of our younger plants throughout the season has been gratifying.

Few changes in arrangement have been made, except in matters of detail. The space behind the gardener's house was largely given up to a collection of named grasses grown from seeds received from St. Petersburg, and from Lansing, Michigan. The seeds sent by Professor Beal, of the Agricultural College, Michigan, gave us excellent plants of our more desirable American species, and furnished a larger amount of material for demonstrations upon the grasses than we have heretofore had. Owing to improved facilities for raising plants from seed at the Garden, a greater number of individual plants of the same species has been grown during the year, to the manifest advantage of the students and instructors.

The perplexing question of properly labelling our plants with durable tickets of some sort has again pressed itself upon our attention. A large proportion of the labels, both in the houses and the open air, are now practically worthless, owing to their illegibility. An attempt, in part, but not wholly successful, has been made to replace some of the smaller painted labels formerly in use by tickets made of thin brass, in which the name is deeply cut by stencil dies. Such labels are not available, however, for our larger plants. The value of a botanic garden depends so largely upon the accuracy and thoroughness with which its plants are named, that no pains will be spared in the endeavor to secure durable labels. In the Garden at Copenhagen the labels are made of white glazed porcelain, upon which the name is enamelled in black under heat, and the lettering is practically indestructible. After an exposure of seven years in the open air such labels are found to have undergone no change. The porcelain tablets are securely fastened to iron rods of considerable length. Owing to the depth to which the rod reaches, the labels have not been misplaced by workmen, while by their complete legibility and durability they appear to satisfy every reasonable requirement. Of course, the first cost of durable labels is high; but a true economy demands that we should speedily replace our decaying and fading ones by some which will not require to be themselves replaced for many years. It is the purpose of the Director to make trial of a number of the porcelain labels, as well as of those of other kinds, in order that a good and uniform system can be established.

Among the more important accessions to our Garden should be first mentioned the Mexican plants obtained by a grant to Dr. Edward Palmer, the explorer. The specimens have proved generally satisfactory, and have furnished a good basis for advantageous exchanges. From St. Petersburg, and from Kew, seeds and valuable collections of living plants, for the most part in a healthy state, have been received in exchange. It is gratifying to be able to report that many of the rare plants desired in exchange by the Director of the Garden at St. Petersburg were received by him in good condition. The present system of exchanges by which real desiderata are used has been found to work well. Of course the system diminishes the number of plants which might change hands, but it reduces likewise the risk of sending unwelcome freight, and of receiving plants which are not wanted, but for which it would be ungracious not to return thanks. The system of exchanges, now well established upon a small scale, is in a fair way to grow, and to the mutual advantage of the Garden and its correspondents.

It is a pleasure to announce that the Garden has obtained during the year several desirable plants by gift. From Mr. Balch, of Salem, a valuable liliaceous plant and several orchids; from Mr. Henry L. Pierce, of Boston, a fine specimen of the chocolate plant; from Mr. J. F. Le Moyne, of Chicago, a good collection of native Orchidaceae have been received and acknowledged. Moreover, from several of the private greenhouses in the vicinity of Cambridge excellent plants have been obtained in exchange. Mr. C. E. Perkins, of Somerville, who has made himself well acquainted with our local flora, has placed the Garden under obligations by an extensive and carefully named collection of seeds of our native plants.

The greenhouses have undergone no important changes during the year, except in the case of the heating apparatus in the older range. It had been felt for some time that risk was incurred by having to depend, during the coldest weather, upon a single boiler, but the way had not seemed clear to purchase additional heating apparatus. H. H. Hunnewell, Esq., a member of the Garden Committee, authorized the Director, early in the year, to procure a second boiler and have it connected with the present system of pipes at his expense. A suitable boiler was at once obtained and placed in working order, so that it can be employed either with or without the older one. This gift has been found of the greatest use. The apparatus has been thoroughly tested under severe conditions, and has proved in a high degree satisfactory. The Garden is not now in great danger of losing its collection of exotics by frost. Although the plants in our greenhouses are by no means so rare that they could not be replaced, the collection is far too good to be exposed to any risk which we can avoid.

LIBRARY University

THE HERBARIUM AND THE HERBARIUM LIBRARY. — Mr. Sereno Watson, the Curator of the Herbarium, makes the following report: —

"The accessions to the Herbarium during the past year have been considerable. Of plants from within the United States, about 2,750 specimens have been received from various sources, including 309 from the Atlantic States, 360 from Texas and Arkansas, 417 from New Mexico and Arizona, 823 from California, 580 from Oregon and Washington Territory, and 261 from the northern interior region. From British America there has been received a set of Professor J. Macoun's collections in the northern plains and Rocky Mountains; from Mexico, the valuable collections of Dr. E. Palmer (about 1,400 specimens), and of Drs. Schaffner and Bilimek; and from the West Indies, a set of Baron Eggers's collections in St. Thomas and Dominica, of A. Fendler's Trinidad ferns, and of Dr. A. H. Garber's Porto Rico plants, in all 820 specimens. Of foreign plants, a set of the grasses of the Wilkes Exploring Expedition (205 specimens) has been presented by the Smithsonian Institution, eight packages of miscellaneous collections by the Musée d'Histoire Naturelle, and eleven packages by Dr. E. Cosson, of Paris.

"Since my return to Cambridge in January my time has been fully occupied in the care of these collections and in other duties connected with the Herbarium. Nearly all of the United States specimens have been examined, determined, and reported upon to the collectors; 2,260 specimens have been poisoned, mounted, and arranged in their places in the cases; and the distribution into sets of Dr. Palmer's entire Mexican collection was overseen, in which great assistance was received from Mr. H. C. Jones. As a result of these examinations over fifty new species and two new genera have been added to the flora of North America.

"Continual care has been required to save the mounted collections of the Herbarium from the injury to which they are more or less exposed from insects and dampness. In the present condition of the Herbarium building and cases this is a serious danger which it seems to be impossible to escape.

"The accessions to the library of the Herbarium amount to about 130 volumes, besides a considerably larger number of pamphlets. These have all been catalogued and duly shelved."

From the Museum at Kew the Garden has received another large and very interesting collection of specimens illustrating the uses of plants. At present we have absolutely no room in which these and our other specimens can be displayed to good advantage. The cases are so thickly crowded that no place can be found for the new specimens which are needed for demonstration; and hence our most recent acquisitions have not yet been removed from the packing boxes, except for lecture purposes. The Director has to acknowledge, in behalf of the Garden, the receipt, from Dr. E. Lewis Sturtevant, of a unique collection of specimens illustrating the different varieties of Indian corn. The carefully labelled specimens, about 350 in number, and exhibiting about 300 different forms, are at present in the packing cases. Numerous smaller gifts to the Museum have been acknowledged by correspondence and by the labels attached to the specimens.

The usual instruction in Botany has been given at the Garden, and, with two exceptions, by the instructors previously reported. The courses of lectures by the Director were suddenly broken off by severe illness in his family, and the instruction was subsequently undertaken by the Assistant in Botany, Mr. Robert W. Greenleaf, who completed the course of practical work in a perfectly satisfactory manner.

The summer course in Botany was given by Professor D. P. Penhallow, who will probably assume charge of the instruction in the same course in 1882. The lectures were attended by a smaller number than usual, but the work done by the students compared favorably with that in any previous summer course. In the opinion of the Director, the summer course in Botany, unless it can be made in some way equivalent to a College elective, and can be made a substitute therefor, should be given by some one who has not given College instruction during the year, or else the course should be relinquished.

The Garden has furnished abundant material for the electives in Botany and in Biology. It has also afforded an opportunity for the prosecution of experiments upon living plants. During the year experiments in Vegetable Physiology have been carried on in the laboratory and the open air, chiefly by Professor Penhallow, who, with the slender means placed at his disposal, has been able to accomplish much satisfactory work. The nature and the results of the experiments upon root-and-stem pressure, and the observations upon their atmospheric relations, have been elsewhere reported. It is hoped that larger means may soon be available for similar researches in the Garden.

The interruption of work on the part of the Director rendered it necessary to suspend further efforts to augment the Garden fund. The amount already secured is, however, a very substantial addition to our working capital. This increase is most largely due to the influence and to the personal efforts of Mr. Alexander Agassiz, Mr. Augustus Lowell, and Miss K. P. Loring. The reasons for increasing the fund to the full amount of $80,000 have been urged in the last annual report, and in the report of the Garden Committee. It is believed that those reasons still hold good.

The Garden has received during the year the following gifts of money for present use. The amount first mentioned was expended, as already stated, for a new boiler and for the cost of setting it in place.

H. H. Hunnewell	$500
Henry L. Pierce	100
John Amory Lowell	1,000

These timely additions to our resources are most gratefully acknowledged.

GEORGE LINCOLN GOODALE, *Director.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I respectfully submit the following report upon the Bussey Institution for the year 1880–81: —

Six students were enrolled during the year, all of them in regular standing; and the degree of Bachelor of Agricultural Science was conferred at Commencement upon three candidates.

Courses of lectures and recitations on Agriculture, Horticulture, Agricultural Zoölogy, Agricultural Chemistry, Botany, Entomology, and Histology were given by Messrs. Motley, B. M. Watson, Slade, Storer, C. E. Faxon, Burgess, and Ford. Each of these courses occupied the entire academic year, with the exceptions that the lessons in Agriculture were somewhat broken in upon by the illness of the instructor, and that the course in Entomology was given in the second half-year, as it is usually.

It is worthy of remark that students of the Bussey Institution are beginning to obtain places as laborers upon farms in the vicinity during the summer vacation, and that such situations can be found without difficulty for promising persons.

No changes of importance have been made in the material equipment of the School, with the exception of somewhat extensive repairs of the greenhouses, which, as was intimated in a previous report, had fallen into serious decay during the term of years in which they were used by the Arnold Arboretum.

The library of the Institution is indebted to Mrs. Sewell Tappan, of Boston, for a valuable gift of dictionaries of various languages and a number of other standard works.

F. H. STORER, *Dean*.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I have the honor to submit the following report upon the condition and progress of the Arnold Arboretum during the year ending August 31, 1881: —

No progress has been made during the year in permanently arranging or planting the Arboretum. This work has again been delayed by the failure of the Government of the City of Boston to adopt the recommendation of its Park Commissioners for a joint occupancy of the Arboretum by the College and the City, on the plan suggested by Mr. Fred L. Olmsted. While action in this matter has not been reached by the City Government, the expressions of public opinion in favor of the scheme have been so strong and so frequent, and the popular interest in the Arboretum and in those branches of rural economy which it is intended to foster and develop has everywhere so increased, that it has not seemed wise to plant any portion of the collections, in view of the fact that the proposed plan, if carried into execution, must necessitate an entirely different arrangement of grounds and plantations.

As I pointed out a year ago, the permanent planting of a large number of trees specially raised for the Arboretum cannot be safely delayed much longer without serious loss; and unless the City is prepared to take definite action in the matter, some method for carrying out the provisions of Mr. Arnold's bequest should be devised without reference to the enjoyment or use of the Arboretum by the public.

The nurseries have been remodelled and replanted during the year, and several important and interesting additions have been made to the number of plants now cultivated, although, owing to the crowded condition of the nursery grounds, no special effort has been made to increase these collections. When the older nursery plants can be permanently provided for in the Arboretum proper, the number of species and varieties cultivated can be immediately and at slight expense nearly doubled.

The nurseries are in excellent condition, and contain large numbers of rare plants, many now introduced into cultivation for the first time.

The interchange of plants and seeds with other botanical and horticultural establishments has been continued through the year. There have been 4,834 plants and 477 packets of seeds distributed as follows: to all parts of the United States, 4,584 plants and 131 packets of seeds; to Great Britain, 13 plants and 106 packets of seeds; to the Continent of Europe, 37 plants and 187 packets of seeds; to St. Helena, 200 plants; to Japan, 52 packets of seeds.

There have been contributed during the year 2,625 plants and 310 packets of seeds from 38 donors.

HERBARIUM AND MUSEUM.

If the living collection has not gained during the year, the Herbarium and Museum have made substantial progress. The Herbarium is rich in North American species, especially in *Coniferae*, Oaks, and other arborescent genera represented by specimens largely collected by the Director and his associates in various journeys undertaken during the past two years for the purpose of studying the forests and the forest resources of the United States.

The Museum now contains an almost complete set of the woods, barks, fruits, and other products of the American forests; and is rich in sets of woods of the trees of Europe, Algeria, India, Australia, and other countries, received in exchange from the Royal Gardens, Kew.

The Museum and Herbarium still find temporary accommodation in the "Dwight House," Brookline, lent by Mr. Ignatius Sargent for the purpose. The detailed account of the operations in these departments will be found in the report of Mr. John Robinson, Assistant in charge, in the Appendix (IV.).

C. S. SARGENT, *Director.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — In my last report I expressed a wish that the Bulletin of the Library might be expanded into a Bulletin of the University. This has been done. Several friends came forward with a promise to supplement for five years the appropriation of the Corporation. We owe this help to Messrs. Charles P. Curtis, William B. Weeden, Henry Lee, Alexander Agassiz, and Charles S. Sargent. The change in the publication took place April 1, 1881, when the HARVARD UNIVERSITY BULLETIN, No. 18 (keeping up the numerical sequence begun with the Library Bulletin), appeared. The new features in the two numbers published during the year have been the following: —

Records of the Corporation and Overseers; an enumeration of current gifts to the University; notices and papers on literature, science, and art; book reviews, and notices and announcements of work done and intended. The old features of the Library Bulletin have been retained.

Two new *Bibliographical Contributions* have been issued during the year, namely, —

1. *Halliwelliana: a Bibliography of the Publications of James Orchard Halliwell-Phillipps*, which has been prepared by the Librarian, with the assistance of Miss Annie E. Hutchins, of the Library staff. It shows the extraordinary number of three hundred and forty separate publications, extending over an interval of forty-four years, during five of which no publication could be discovered. The proofs were submitted to Mr. Halliwell-Phillipps, and to an assiduous collector of his publications, Mr. Samuel Timmins, of Birmingham, England; and it is hoped that these precautions have served to make the list as complete as possible. The publications of Mr. Halliwell-Phillipps are rich in antiquarian lore, and are chiefly illustrative of early English, and particularly of Shakespearian, literature. Many of them are of few pages each; but as most have been issued in very small editions, it has become more necessary that their existence should be chronicled in such way as is now done. To aid students, an indication of the principal libraries in this neighborhood possessing the books is added to the title of each.

2. *A List of the Publications of Harvard University and its Officers*, which has likewise been arranged by the Librarian, with

the assistance of Mr. C. S. Bowen. It contains the publications of the University, or of any of its departments, for a period of ten years (1870–1880), and such papers or books as were published by its officers during their connection with the University, so far as that connection falls within these ten years. It was undertaken by direction of the President, and shows what has been, during this interval, the University's activity in science and literature, either as a body or through the individual efforts of its staff.

Mr. Arnold reports upon the progress of the rearrangement of the books in Gore Hall, as follows: —

"The number of volumes now in place in the new stack is 65,970; the number added to the permanent classification during the year is 13,010. The comparative smallness of the latter number is simply accidental, and does not fairly represent the work of the year, since about ten thousand volumes of Greek and Latin classics have been brought together and partially arranged, but are not ready to appear in this year's report.

"Most of the works arranged during the year are included in the three classes of English Literature (from the French Revolution to the present time), Language, and Classical Philology. Language includes all works on grammar and lexicography, and the languages are arranged by families. The general order is as follows: Science of language, Indo-European comparative grammar, Monosyllabic and Agglutinating languages, Hamitic, Semitic, and Indo-European families. In the department of Classical philology, only the works on Greek and Roman history and antiquities and the periodicals are in their final position.

"The number of volumes in each class is as follows: —

	Vols.
English Literature (since 1779)	3,150
Language	5,082
Classical Philology	1,732
Added to classes previously arranged	3,046

"During the year 1,001 volumes have been transferred to this Library from that of the Divinity School. Many of these have already received their place in the new classification. The work of classifying the pamphlets has been carried on, and a considerable number have been bound into volumes.

"After the work of one more year in rearranging, the question of room will become a serious one. So much space is now occupied in the new stack by works which must find their ultimate position in the old building, that it will not be possible to continue the work of rearranging in the new stack much longer than another year without some other provision for such works than now exists."

The accessions to the University Library for the year, and the present extent of the various departments, are as follows: —

Departments.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) .	7,873	195,173	194,196
Law School	600	19,609	2,777
Scientific School	27	2,346	200
Divinity School	102	16,252	1,609
Medical School	9	2,009	....
Museum of Zoölogy	711	14,835	8,914
Astronomical Observatory . .	81	2,753	5,195
Botanic Garden	132	3,232	1,460
Bussey Institution	192	2,392	842
Peabody Museum	77	502	647
Totals	9,804	259,103	215,840

Of the accessions to the Gore Hall collection, there were added by gift 2,068 volumes and 13,656 pamphlets; and such accessions also include 1,001 volumes transferred from the library of the Divinity School, which is diminished by as much, in addition to a reduction shown by an absolute count, recently made.

In December, 1880, I was requested to give to the Corporation the outline of a plan for further unifying the work of the several libraries of the University, and on the 13th of that month the President and Fellows sent the following notice to all departments of the University Library, and also to the several academic departments, which have small class-room reference collections: —

> "1. No book shall hereafter be purchased by any department of the University, except the Law School, out of appropriations or otherwise, unless through the Librarian of the University, who shall from time to time prescribe the form for ordering purchases, and rendering account for the same.
>
> "2. All books hereafter acquired by any department of the University by purchase or gift shall be sent to the College Library, where they shall be catalogued and have the stamp and book-plate of the University put upon them before they are sent to the library of the department."

Accordingly, the purchasing and cataloguing of books for all departments of the University have been done at the College Library during the greater part of the year, excepting that the cataloguing only has been done for the Law School. The plan has secured uniformity of ordering and payment; has made it possible to prevent needless duplication of books in the several departments; has diminished in some cases the cost of the books; has provided for a uniform system of cataloguing; and has resulted in making during this interval the catalogue in Gore Hall the index to all departments of the University Library.

The President and Librarian, authorized by the Corporation, have begun the remodelling of the old part of Gore Hall, by the conversion of what was a low, damp, and dimly lighted cellar, under that part, to a well-lighted, dry, and commodious apartment, for the storing of newspapers and duplicates, and for other possible uses. By excavating about a foot and a half of earth, an additional height has been gained under the brick vaulting; the windows have been cut down and provided with well-drained areas without, and a drain has also been extended about the main walls. The collection of bound newspapers already occupies a running space of four hundred feet, and the accommodation for them in the other parts of the Library was inadequate and inconvenient.

The preparation of references for themes, forensics, and oral discussions has been continued.

The following table shows the use of books at Gore Hall, as compared with the last two years: —

	1878-79.	1879-80.	1880-81.
1. Books lent out	41,296	41,986	45,481
2. Used in the building	10,921	7,812	11,724
3. Overnight use of reserved books	7,519	10,506	11,872
Total (excluding No. 3, which is included in No 1)	52,217	49,798	57,205
Cards giving to students temporary admission to the shelves	....	60	85
Times of use	....	340	870
Officers of instruction reserving books . . .	....	35	38
Number of books reserved	....	3,330	3,418

The 85 students using admission cards have been in these departments: History, 31; Science, 14; Art (including music), 12; Literature, 12; Greek and Latin authors, 5; Philosophy, 5; Theology, 4; and Political Economy, 2.

On Sunday, Oct. 3, 1880, and thereafter on Sundays, the library in Gore Hall was kept open for the use of such members of the University as desired to use the books in the building only. For 37 Sundays (till the long vacation came) 1,846 persons availed themselves of this opportunity, an average of 47 each Sunday. The hours were from one to five o'clock. The highest number on any one day was 64.

The work of the catalogue department is indicated by the following table: —

Cards of the Public Catalogue.	1878-79.	1879-80.	1880-81.
1. Put in place	86,390	35,815	41,215
2. Prepared	20,595	24,887	25,705
3. Having shelf-numbers altered (*estimate*) . .	....	....	75,000
Totals (excluding No. 2, already counted in No. 1)	....	....	116,215

These figures are instructive as indicating the great chance for disarrangement of the cards, incident to the ordinary work of the Library. It appears for the past year that beside the 25,705 cards put in the drawers for the first time, there were 15,510 cards returned to the drawers, after being taken out for additions, corrections, verification, or for other reasons. The shelf-department also removes about 75,000 cards a year for the purpose of affixing the new shelf-marks. Thus we may say 116,215 cards have been inserted or reinserted during the year; or, in other words, probably more than one tenth of the catalogue has been thus handled; and it is hardly possible to do this without causing more or less misplacement.

Mr. Scudder furnishes the following statement regarding the subject catalogue: —

"The revision of the primary subjects under which the cards are arranged has proceeded as fast as practicable, and is now about half completed. Of the 650 general headings in the catalogue at the beginning of the year, 152 have been changed or are undergoing change, 198 have been discussed and left as they were, leaving 300 still to be supervised. As, however, the principles involving all changes have been settled in the work already done, the concluding part will be carried forward with much greater rapidity. The changes which have been made have, in each case, involved the alteration of from one to fifty or a hundred cards in the subject catalogue, as well as of an equivalent number in the author's catalogue, each of which must be separately found, marked, and replaced.

"The aim has been to make the catalogue as consistent and uniform as possible with the least number of alterations and with a view also to future accessions. Some classes of subjects bidding fair to increase indefinitely in the future and thus seriously to disturb the contemplated numerical notation have been grouped under primary heads, where their multiplication cannot become a source of anxiety. No changes, however, have been made which are not in themselves, apart from the question of notation, desirable. Thus, the various bodies of *Literature*, as Arabic, Bengali, Cornish, &c., formerly scattered through the alphabet in more than eighty places, are now brought under that one head into a single drawer. So, too, different forms of machines have been made "Sections" of *Machinery*, instead of standing each in an independent position in the catalogue; and numerous changes of a similar nature have been introduced."

In March was issued the first number of *The Harvard University Calendar*, and it has been continued weekly, with an intermission of the long vacation. It aims to give under each day of the week, and sometimes in advance of the week, to the University Staff and students announcements which do not make a part of the regular Tabular Views or programmes; and to become a medium of notice to residents of Cambridge concerning all lectures and exhibitions in which they may have an interest.

Among the most interesting gifts of the year has been the collection of books relating to Frederick the Great and Cromwell, used by Thomas Carlyle in writing his books on those characters, and bequeathed by him to this Library. They have been safely received, and number 418 volumes. Very many of them are more or less enriched with his annotations. The correspondence and other documents relating to the bequest are printed in the *University Bulletin*, No. 18, p. 166.

Professor Norton promptly took occasion to place with these books an interesting memorial of Cromwell, which had formerly been in Carlyle's library, namely, a cast from the mask of Cromwell's face, taken after death. Mr. Norton had received it some years ago as a gift from Carlyle.

JUSTIN WINSOR, *Librarian.*

To the President of the University:

Sir, — The present condition of the Harvard College Observatory furnishes a test of an opinion expressed in some of its recent annual reports, namely, that any addition to the resources of a scientific institution already supplied with the funds needed to keep it in working order will prove an advantageous investment. Such a sum is directly applicable to the extension of scientific inquiry. A similar gift to establish a new institution, or to support a feeble one, will be largely consumed in the mere preparation for such inquiry, and the head of the institution must spend much of his time in routine work, even if he is not required to devote a large part of his energies to teaching, as well as to research.

The proper division of labor, and the continuous use of apparatus, are advantages as important in science as in the arts. These advantages are possessed by a liberally endowed observatory as they are by the factory of a rich proprietor, who can afford any immediate expense required to secure the most abundant returns. It seldom happens that the endowment permits the use of the instruments to their full capacity. Until this point is reached, great results may always be expected from a slight increase of income.

The subscription raised in 1878 for the support of the Observatory for five years has given it for that time a much improved position for conducting researches. Many of the contributors to the fund paid their subscriptions in full at the outset, and the Observatory thus acquired a large balance to the credit of its account with the University, which will of course progressively diminish until the five years have expired.

One of the most important advantages resulting to the Observatory from this temporary enlargement of its resources consists in the increased number of its assistants, which is now sufficient to allow the work of each to be more advantageously directed than was previously possible.

The observations with the large equatorial and meridian photometer are made by Mr. Searle, Mr. Wendell, and myself. Messrs. Cutler and Eaton assist in recording these observations and in their reduction. Miss Farrar and Mrs. Fleming also take part in the reductions. The meridian circle remains in the charge of Professor Rogers, who is aided in the observations by Mr. Brown, and in their reduction also by Mrs. Rogers and by Misses Saunders, Bond, and Winlock. The time-signals are in charge of Mr. Edmands, assisted by Mr. Chandler. These gentlemen and Mr. Howard are making the naked-eye observations of northern stars. The meteorological observations are ordinarily made by Mr. Searle, who also has charge of the accounts, correspondence, &c., and has devoted much time to work connected with the revision and publication of the equatorial observations. The compilation of the bibliography of the variable stars, and the computation of cometary orbits as noted below, are conducted by Mr. Chandler.

Three instruments, the equatorial, meridian circle, and meridian photometer, have been kept actively at work during the past year. The last of these instruments has proved so satisfactory that a large one is being constructed to carry on observations of stars too faint for the present instrument. The new photometer will have object-glasses four inches in diameter, and will be capable of measuring any star brighter than the tenth magnitude. It is expected that such measurements will form a part of the permanent routine work of the Observatory. The relation of a meridian photometer to other photometers resembles that of a transit instrument to a sextant. There are the same advantages of rapidity, ease of reduction, and probably of precision. On the completion of the new photometer we shall have the same advantages for measuring the light of any star that an observer would of finding its position if he possessed the only transit instrument in existence. It is hoped that the use of this instrument will become more general when its advantages are appreciated. I understand that a distinguished German astronomer is planning a photometer for similar work, and at his request a description of the instrument used here has been forwarded to him.

The work of these various instruments will now be considered. That of the large telescope may be classified as below, with reference to the principal objects observed.

Eclipses of Jupiter's Satellites. — One hundred and fifty-three of these eclipses have been observed photometrically, sixty-four during the past year. One improvement has been introduced by which the number of settings may be nearly doubled. A single observer can make but three settings a minute, or one in twenty seconds. With an assistant to record, the time is reduced to about nine seconds. This time has been reduced to five seconds by the employment of two assistants, one of whom reads the photometer circle, while the other records and observes the time by the chronometer. As the observer does not remove his eye from the eye-piece, it is probable that the accuracy of the observations will be increased, and the satellite followed nearer to the point of disappearance.

Objects having Singular Spectra.—The search for these objects has been much interrupted by the pressure of other work. Only perfectly clear nights when the moon is absent are available, and these rarely occur at certain seasons of the year. The general survey of the heavens with a telescope of four inches aperture has been completed from twenty to twelve hours of right ascension. The observations during the summer on the remaining eight hours were so much interrupted by the long twilight and other causes that it was deemed best to reserve this work for another season. The most important result of this search has been the discovery of the peculiar spectrum of the star Ll. 13412. Three bright lines were found having wave-lengths of 545, 486, and 466 millionths of a millimeter. The second of these lines probably coincides with the F line of hydrogen. The other two were unexplained until Dr. Konkoly, in "The Observatory," IV. 257, described the spectrum of Comet 1881 III. (the Great Comet), as containing the five lines 560, 545, 515, 472, and 468. Three of these, the first, third, and fourth, are the usual cometary lines; the other two appear to be coincident with the lines of Ll. 13412. Accordingly, while other comets have a spectrum identical with that of the stars of Secchi's fourth type, and apparently largely composed of carbon, this comet contains a substance as yet unknown, which one star only is as yet known to contain. The bright-line stars in *Cygnus* and in *Sagittarius* also give the line 467, but differ in the position of the other lines.

Another interesting discovery is that the star *L*^{2}*Puppis* has a banded spectrum. This star is more than forty-four degrees south of the equator, and at the time of observation was less than two degrees above the horizon.

Two stars were found, one in *Puppis*, the other in *Ursa Minor*, which from their color and spectrum were at once thought to be variables of long period. These predictions were verified by observation, and a very rapid method of discovering variable stars is thus suggested. An announcement of the last of these discoveries was telegraphed to the Astronomische Gesellschaft as an example of the cipher code referred to below.

The spectra of all the stars north of —40°, marked as red or colored in the Uranometria Argentina, have been examined in the large telescope. In most of them no peculiarity of spectrum could be detected. From the remainder, and from some miscellaneous sweeping for such objects, a list of about eighty stars having banded spectra has been compiled and published.

Variable Stars. — The photometric study of the stars *β Persei* and DM. 81° 25, proposed in my last report, has been carried out. The number of comparisons made of *β* and *ω Persei* was 2,748, six hundred during a single night. On this occasion the observations were continued almost without intermission from a quarter of seven in the evening to half past three in the morning. In like manner, 3,276 comparisons of DM. 81° 25 and 26 were made on five evenings. Nine hundred settings were obtained during one night. The probable error of a single minimum determined in this way is only about 1.3 minutes.

Comets. — This Observatory has taken an important part in the early distribution of circulars relating to the comets recently discovered, by defraying the cost of telegrams, and by furnishing the necessary observations and computations. In co-operation with the Dun Echt Observatory and the Science Observer, circulars have been distributed in Europe and America, giving an early announcement of the elements and ephemerides of the five new comets discovered in the first ten months of 1881. The average interval between the time of announcement of the comet and the issue of the circular has been less than a week. The interval between the last of the observations needed to determine the orbit and the time of telegraphing the elements to Europe has been less than two days. The computations have been generally made by Mr. Chandler, who has not hesitated, whenever necessary, to continue them through the entire night. No important error has occurred in their telegraphic transmission to Europe, by means of the ingenious cipher code devised by Messrs. Chandler and Ritchie. These preliminary orbits proved sufficiently accurate for the purpose for which they were intended. That of the Great Comet of the year (Comet 1881 III.), was published within four days of the first appearance of the comet in the northern heavens, and agreed more nearly with observation than any other published elsewhere for some time. This agreement was due to the use of an early observation made at Rio. Barnard's Comet was not found in Europe until the publication of the ephemeris computed here. Denning's Comet was early suspected by Mr. Chandler to be periodic. Elliptic elements were computed by him; but a later mail showed that he had been preceded by Dr. Schulhof of Paris in this work.

The use of the large telescope in the observation of comets has not, in general, been allowed to interfere with the other work of this instrument, except when early observations were needed for the determination of their obits. Almost all of the observations were made by Mr. Wendell, many of them late in the night, when the telescope was not otherwise occupied. Comet 1880 IV. was observed on twenty-nine nights; Comet 1881 II., on two; Comet 1881 III., on forty-three; Comet 1881 IV., on fifteen; Barnard's Comet, 1881, on ten; and Denning's Comet, 1881, on eight.

Some miscellaneous measurements have also been made of these comets, particularly of Comet 1881 III. The form of this comet's tail was measured, and the brightness of portions of it at various distances from the head.

Meridian Circle. — During the past year observations have been made on 250 days. This number is distributed by months as follows: —

	Month.	No. Days.		Month.	No. Days.
1880.	November . . .	26	1881.	May	20
1880.	December . . .	21	"	June	18
1881.	January	24	"	July	22
"	February . . .	18	"	August	12
"	March	17	"	September . . .	23
"	April	24	"	October	25

The whole number of observations made during the past year is as follows: —

		No. Obs.	Total No. Obs.
Polaris.	Upper Culmination	122 . . .	
Polaris.	Lower Culmination	110 . . .	232
Sun.	Vernal Equinox	31 . . .	
	Autumnal Equinox	45 . . .	
	North Solstice	13 . . .	
	South Solstice	15 . . .	158
	Fundamental Stars		1999
Polar Stars.	Upper Culmination	293 . . .	
	Lower Culmination	170 . . .	463
Miscellaneous			350

The observations for the determination of the horizontal flexure by means of the collimators have been continued throughout the entire year as often as the atmospheric conditions have been favorable. The whole number of observations is fifty-eight. It was stated in the last report that the horizontal flexure for January of any year had been found to be about 0″.6 greater than for July of the same year. Since that time the values of this function derived from the fundamental stars observed have been computed for the years 1876 and 1877. We have now, therefore, sufficient data to determine the reality of this apparent variation. The values given below represent the difference between the value of the correction described as horizontal flexure for the mean of the months of January and December of any year and for the month of July of the same year both from the fundamental stars and from the collimators.

From the Fundamental Stars.		From the Collimators.	
$\frac{\text{Jan.}+\text{Dec.}}{2}$	— July Δ Ra.	Jan.	— July Δ Ra.
	″		″
1872	+0.64	1879	+0.73
1873	+0.39	1880	+0.56
1874	+1.09	1881	+0.48
1875	+0.73		
1876	+0.14		
1877	+0.71		
1878	+0.62		
Means	+0.62		+0.59

The action of temperature upon the screws by which the two halves of the tube of the telescope are joined to the cube of the circle is suggested as the probable cause of this difference. Observations with the long collimator for the determination of the variation of the instrumental constants of the instrument have been continued throughout the year. For the most part there are two series during each day on which stars have been observed. During the autumn and winter, the image of the concentric rings, or the focus of the collimator, remains remarkably steady; but during the summer, it has been found necessary to limit the observations to the evening and to the early morning hours. As a further check upon the variability of the index-error of the circle, some experiments were made with the reserve level of the Russian transit; this method, however, proved unsatisfactory. A level of the form invented by Mr. John Clark was ordered of Fauth

& Co., and was mounted upon the cube of the telescope in May. The use of this instrument has been limited to the determination of the variability of the level of the telescope and of the index-error of the circle. A definitive opinion of the value of this method of detecting changes in the position of the zero of the circle must be deferred till the value of the index-error has been derived from the observations of Polaris. According to present indications the level gives somewhat better results than the long collimator. At present the observations are arranged for the detection of changes occurring between the morning and evening hours.

A decided improvement in the performance of the Standard Clock, Frodsham No. 1327, has been maintained since its removal to the cellar of the building, as is shown below in the account of the Time Service. The extreme variation of the thermometer placed within the room and read through a glass window from the outside has been 8°. Comparisons of this clock with the mean-time clock at Waltham have been continued as before by means of the line of telegraph erected for the purpose.

The investigation of the errors of the fixed circle of the telescope for each degree was completed in August. A metal plate having an arc of 15° subdivided to 5′ was used for the investigation. It was attached to the frame which carries the microscopes opposite the circle to be examined. The frame proved to be capable of revolution with no sensible disturbance of the focus of the microscopes. Each 15° of the fixed circle was compared with the constant arc upon the plate. Two series, one in May and the other in August, show a good agreement. The maximum error of any space was found to be about 1″.4, and the accumulated systematic error for 180° does not exceed 1″.3. The errors of the single degrees were found by comparing each degree with the first degree of the metal plate. From the provisional reductions it appears that the accidental errors of division rarely reach 1″ and that with two or three exceptions they never exceed 1″.3. The investigation is to be completed by an examination of each space of 5′.

Observations of certain stars were made at the request of Professor Davidson of the United States Coast Survey, of Professor Hall of the Naval Observatory, and of Captain Tupman of the Greenwich Observatory. Two observations were made of Comet

1881 III., and a special series of 280 observations was made for the purpose of ascertaining whether the telescope moves in a vertical plane during its revolution.

The chronograph sheets for 1880–81 have been read off to July of the current year. Since the last report, considerable progress has been made in the reduction of the zone observations. In the preliminary reductions of the fundamental stars, the observations of a few stars were found to indicate persistently a disagreement with the fundamental positions of Publication XIV.

By comparing the separate values of $(\Delta T+m)$ and of the equator-point correction for each date with the mean values of these functions for the same date, a list of stars showing substantially the same discordances from year to year was made out. From this list twelve stars in right ascension and forty stars in declination were selected for special examination. A list of the resulting corrections to the positions in Publication XIV. was submitted to Professor Auwers, with a request for instructions in regard to the proper course to be pursued in this case. He has subsequently authorized, on behalf of the Council of the Astronomische Gesellschaft, the use of the provisional corrections already found. The actual determination of the definitive values of $(\Delta T+m)$ and of the equator-point correction has been unavoidably delayed by this inquiry.

The right ascension constants have now been determined for the entire series from 1870 to 1879, and the declination constants have also been found for the same time, except for the year 1871–72. The computation for this interval is nearly completed.

The entire number of dates, for which the constants have been determined, is 1,263. The tabular reductions to apparent place and the refractions have been completed for the entire series of zone observations. The reductions have been made for intervals of twenty minutes in right ascension and two degrees in declination. The whole number of days for which these computations have been made is 633, and the number of individual reductions is about 12,000.

Meridian Photometer. — The work originally proposed for this instrument of measuring on three nights the light of each of the naked-eye stars visible in this latitude was essentially completed August 25, 1881. The observations will be continued during another year, as the necessary delay for reduction and publication will not thereby be greatly increased. Of the four thousand stars in our catalogue, about fifteen hundred have been selected for re-observation on three nights each. We shall thus obtain at least six observations of these stars, which include all those brighter than the fourth magnitude, all those used in the principal nautical almanacs as standards, and all those of which the first measures proved discordant. About seventy-six thousand measures have been made in all; thirty-six thousand since November 1, 1880.

From a discussion of the upper and lower culminations of a hundred circumpolar stars, the law of atmospheric absorption has been deduced, and the corresponding correction for each of the stars observed determined. All the readings have been reduced to magnitudes, corrected for the difference in transparency of the prisms, the mean taken when the stars are completed, the residuals derived, and the probable error deduced. This work has also been in a great measure checked and entered in the sheets of copy ready for publication.

A comparison of the photometric observations with those made by the naked eye is much to be desired. The Uranometria Argentina furnishes the means of doing this with the southern stars, but extends only to 10° north. Accordingly, all the stars in the Atlas Coelestis Novus of Heis north of the equator, and brighter than the sixth magnitude inclusive, are being measured by the eye, aided, when necessary, by an opera-glass. Each star is to be measured by three observers, who are to compare it with two stars in the vicinity of the pole, one being a little brighter, the other a little fainter. The interval between the two is supposed to be divided into ten parts, and the brightness of the star to be measured is estimated in terms of this interval. The standard stars, one hundred and fifty-seven in number, include all stars brighter than the second magnitude, and those between 60° and 75° north, which are used in determining the atmospheric absorption. The total number of comparisons required for this work is about nine thousand, of which nearly a quarter have already been made.

Time-Signals. — The distribution of time-signals continued in charge of Mr. F. Waldo until June 1, and since then Mr. Edmands has assumed their care. Special attention is now given to keeping the error always small, instead of reducing it to zero at 10 A. M. By graphical methods, the accuracy of the determination of the error during long periods of cloudy weather has been much increased. It is believed that the error rarely exceeds two tenths of a second in clear weather, and four tenths when cloudy, and that the error seldom changes more than two tenths of a second from one day to the next.

In July, the mean-time clock, Bond 394, stopped, after sending the signals continuously for four years. It was kept in use, however, till October, when it was dismounted and thoroughly repaired. Meanwhile, from October 7 to October 21, the time-signals were sent by the clock of Messrs. W. Bond & Son, in Boston. It is hoped that hereafter it will not be necessary to take this course, as the sufficiently exact regulation of a clock so far from the Observatory proved to be a troublesome and laborious undertaking. In August, the standard sidereal clock, Frodsham 1327, was cleaned and removed to the new brick vault under the west Equatorial. For a period of twenty-five days, beginning August 30, during which it was left wholly undisturbed, its performance was remarkable both for the uniformity and minuteness of its rate. Its error did not vary two tenths of a second on the thirty-two occasions on which it was compared with the stars.

Various ingenious devices have been adopted by Mr. Edmands for use in the Time Service. Among others may be named those for making a single clock run two independent observing circuits, without the use of relays, and without interference of the observations. Spark arresters have been introduced, that on the standard clock being a sounder which gives the breaks of the clock without those of the observer. Another sounder gives the time-signals uninterrupted by the five-minute break. Experiments are in progress with a view of improving the methods of distributing standard time. One of the most important of the proposed improvements is a contrivance by which the signals may be delayed by any desired fraction of a second without affecting the clock. An error in the signals may thus be corrected without interference with the pendulum. By this means many variations in the rate of the clock may be prevented, and its performance proportionally improved.

The time-ball has been dropped correctly on 322 days at twelve o'clock by telegraph. Owing to repairs to the roof of the building, it was not dropped during an interval of thirty-five days. On five days it was dropped at twelve o'clock by hand. On two days it failed to drop at twelve, and was dropped five minutes later, according to the rule; and on one day ice on the mast prevented it from being raised.

Publication. — Volume XIII. of the Annals is now in process of publication, and will be issued as soon as it can be got through the press. It will contain the results of the work with the large telescope, under the direction of the late Professor Winlock, and also the micrometric measurements made up to the present time. Among other subjects treated will be a discussion of the focal length of the telescope and the pitch of the micrometer-screw; measurements of double stars; observations of nebulae and of their spectra; satellites of Saturn, Uranus, and Neptune; satellites of Mars during the opposition of 1877 and 1879; positions of asteroids and comets. An appendix will be added, giving an important list of errata in the zone observations of Professor Bond, kindly furnished by Dr. C. H. F. Peters. As soon as this volume is completed the printing of Volume XIV. will probably be commenced. It will contain the measures made with the meridian photometer.

The papers mentioned below have appeared during the year as communications from officers of the Observatory: —

Variable Stars of Short Period. By Edward C. Pickering. Proc. Am. Acad., xvi. 257. Reprinted in The Observatory, iv. 233, 264, 284.

Large Telescopes. By Edward C. Pickering. Proc. Am. Acad., xvi. 364. Reprinted in Nature, xxiv. 389.

Photometric Measurements of the Variable Stars *β Persei* and DM. 81° 25, made at the Harvard College Observatory. By Edward C. Pickering, Director, and Arthur Searle and O. C. Wendell, Assistants. Proc. Am. Acad., xvi. 370.

On the Probable Period of Swift's Comet. By S. C. Chandler, Jr. Astr. Nachrichten, xcix. 45.

Comet III. 1869. By Edward C. Pickering. Astr. Nachrichten, xcix. 95.

Observations of Last Contact of Solar Eclipse. By Edward C. Pickering. Astr. Nachrichten, xcix. 107.

Elements of Pechüle's Comet (*f*) 1880. By S. C. Chandler, Jr. Astr. Nachrichten, xcix. 109.

The Comparison of Sirius. By Edward C. Pickering. Astr. Nachrichten, xcix. 219.

On Certain Zodiacal Phenomena. By Arthur Searle. Astr. Nachrichten, xcix. 91, 369.

Objects remarkable for their Colors or Spectra. By Edward C. Pickering. Astr. Nachrichten, xcix. 375.

The Coefficient of Safety in Navigation. By W. A. Rogers. Proc. U. S. Naval Institute, vii. No. 2.

A review of Vol. XI. Part II. of the Annals of the Observatory, by Dr. E. Lindemann, appeared in the Vierteljahrsschrift der Astr. Gesellschaft, xvi. 108. A review of the articles on Variable Stars appeared in the Crónica Científica (Barcelona), iv. 401. Other notices of the Observatory and its work will be found in Nature, xxii. 483, 611; xxiii. 321, 338, 604; in Science, ii. 33, 107, 141, 164, 329, 447, 482; in The Observatory, iv. 81, 113, 116, 154, 245; in Copernicus, i. 139, 140.

With reference to the article on large telescopes, it may be noted that should any addition be made to the equipment of the Observatory, a telescope, mounted according to the method there described, is recommended. It is believed that in no other way could the same amount of work be obtained with a given expenditure. With our present resources, however, it is much more desirable to keep the instruments we now have actively at work than to make any addition to their number.

An important piece of bibliographical work has been undertaken, and placed in charge of Mr. Chandler. The references to observations of stars of known or suspected variability have been collected, and those of each star brought together. This portion of the work is more than half completed. The comparison stars are then to be measured photometrically, and, finally, a reduction to a uniform system to be made of all the observations of variables of long period.

Various improvements have been made in the condition of the buildings and grounds. Two wooden balconies, having an area of seven feet by seventeen, have been constructed, to replace the small iron balconies to the east and west of the large dome. They are exceedingly convenient for observations made with small instruments or with the naked eye.

In order to connect the previous determinations of longitudes by the U. S. Lake Survey with an established meridian, it was proposed by the Superintendent of the Survey to determine the difference of longitude between Detroit and Cambridge. Facilities for the work were accordingly furnished by this Observatory, and the observations required were made by officers of the Survey. Later in the season, a course of experiments on the force of gravity, by means of pendulum observations, was conducted at the Observatory by officers of the U. S. Coast Survey, who were provided with similar facilities for their work. The West Equatorial was lent for the summer months to Professor S. P. Langley, who used it in observations made on the summit of Mount Whitney, in California.

There are some advantages in an early announcement of proposed investigations, even when the preliminary experiments are not sufficiently advanced to insure their execution. The aid and advice of other astronomers may thus sometimes be secured, and the danger of duplication of work is greatly reduced. No change in the character of the work is proposed, except that an attempt will be made to restrict the work of the large telescope more closely to large pieces of routine work. Such investigations are less likely to be made at observatories where the corps of assistants is smaller, and have a value not attained by detached observations. With the ultimate object of determining the distribution of the light in the spectra of the banded stars, a stellar spectroscope has been ordered of Mr. Hilger, of London. With this it is proposed to measure the position of the principal lines in the spectra of all the banded stars as yet known. A catalogue of these objects has already been compiled. With the approval and assistance of the Selenographical Society, the photometric determination of the brightness of various points on the surface of the moon has been undertaken. The Society has furnished a list of regions suitable for standards, and the observations may be begun after the decision of some further preliminary questions. The most important of these relates to the age of the moon at which the comparisons should preferably be made. In co-operation with other astronomers, a system of standards of brightness for faint stars has been devised, and measurements of their light will be shortly undertaken.

The new meridian photometer will be used for measuring variable stars and their comparison stars, and also for determining the light of the brighter asteroids. An important piece of work is now under consideration, which would occupy this instrument for several years. During the revision of the Durchmusterung, undertaken by a number of co-operating observatories, and now approaching completion, each of the zones into which the entire region to be surveyed was divided, was somewhat extended northward and southward, so as to overlap the adjacent zones. The object of this extension was to connect the work of the different observers. Hence, the portions of the sky occupied by the overlapping borders of the zones offer a promising field for photometric research, as each determination may be compared with the estimates of magnitude made independently by two observers, with the Durchmusterung itself, with the zones of Argelander and Bessel, and with various other authorities. The number of stars to be measured is estimated at about six thousand, and the time required for the observations with the new meridian photometer would be at least three years.

EDWARD C. PICKERING, *Director.*

To the President and Fellows of Harvard College:—

During the past year the exterior of the northwestern cornerpiece of the Museum building has been finished, and fair progress made towards the completion of the interior. Four of the rooms are now ready for use, and the greater part of the rest of the building will be finished during the coming year.

The usual instruction has been given at the Museum by Professors Whitney, Shaler, Hagen, James, Farlow, and Faxon, and by Messrs. Mark, Davis, and Wadsworth. For the details of these courses, I would refer to the special reports of the Professors and Assistants.

An arrangement has been made with Professor S. F. Baird, United States Fish Commissioner, by which the Museum will have the right to send annually one student to Wood's Holl to avail himself of the facilities for the prosecution of zoölogical research afforded by the new zoölogical station to be established by the Commissioner.

As in former years, two of the assistants of the Museum and two special students spent the greater part of the summer at my Newport Laboratory. The former devoted their time principally to embryological studies of Crustacea and Acalephs. A part of the collection of Crustacea dredged by the "Blake" has been returned by Professor Alphonse Milne-Edwards. Professor Oscar Schmidt has also returned the whole of the collection of "Blake" Sponges. Professor Carus has returned the Cephalopods.

Collections have been sent for study to Professor Verrill, to Dr. Meinert, to Mr. Simon, to Mr. Eaton, and to Count Keyserling.

The publications of the Museum during the past year are shown in detail in Appendix A. to the separate Report on the Museum. They consist of Bulletins by Messrs. Agassiz, Lyman, Verrill, Fewkes, Faxon, Wadsworth, Hamlin, Garman, Allen, and Hagen.

The preliminary Reports of the "Blake" collections have made excellent progress during the past year. Part I. of the Crustacea by Professor Alphonse Milne-Edwards has been published; also the preliminary Reports of the Starfishes by Professor Perrier, and of the Mollusca by Mr. Dall. The Reports on the Cephalopods by Professor Verrill, and by Mr. Wilson, E. B., on the Pycnogonidæ, have been issued in the Museum Bulletins. No. 2, Vol. VII. of the Memoirs containing the "Climatic Changes" by Professor J. D. Whitney has been issued, in connection with Professor Whitney; and the Second Part of the Immature State of the Odonata, the Æschnina, has been published by Mr. Louis Cabot.

The additions to the Library have not been quite so large as usual, as no extensive purchases were made this year.

Among the publications of the Assistants of the Museum not issued in the Museum publications, may be mentioned a monograph by Mr. J. A. Allen on the Seals, founded in part on Museum material, and published in the United States Geol. Survey Report.

Professor Shaler and Mr. Davis have published the first of a series of Memoirs intended to illustrate the principal features of the structure of the crust of the earth.

Mr. Lyman has published a paper on some remarkable deep-sea Ophiurans, in the Memoirs of the Boston Society of Natural History, and has also completed his final Report on the Ophiurans of the "Challenger."

I have myself seen through the press the final report on the Echini of the "Challenger" Expedition to be issued as Vol. III. of the Zoölogy of that expedition; it forms 321 pages and 65 plates.

During the past year the lower floor of the Systematic Collections of Mollusks and the South American Faunal room have been opened to the public, although the collections they contain are not yet properly labelled. Good progress has also been made in the arrangement of the Australian room, and the materials for the African and Indian Faunal Collections are coming in at a satisfactory rate. The completion of the exhibition rooms of the wing will now enable us to make the final arrangement of the Systematic Collection of Fishes and of Birds, as all the material foreign to these collections has been removed to the proper storage rooms.

The Annelids have, as usual, been under the care of Dr. Mark. There is nothing special to report on this collection; the bulk of it is still in Europe in the hands of Professor Ehlers.

The Corals and Sponges have during the past year been in charge of Mr. Fewkes, who has selected sets of duplicates of the "Blake" Sponges for distribution, and commenced the arrangement of the Halcyonoids for the Systematic Collection.

A complete series of Blatschka glass models of Radiates has been added to the Systematic room of that group. Two important collections of Invertebrate palæozoic fossils have been purchased during the year, one the collection of Professor G. Washington Taylor, principally rich in fossil Cephalopods, from the New York Silurian. Also the collection of the Rev. F. H. Day, brought together during a series of twenty years, mainly from the Niagara limestone of Wisconsin, near Milwaukee.

During the past season Mr. Garman has been engaged in collecting fossil Vertebrates in the Bad-lands, supplementing the collection made by him from these localities during the previous year. Mr. Charles H. Sternberg has also been engaged in collecting for the Museum, and has brought together an admirable collection of Cretaceous Plants of Kansas. His collections, as well as a collection of Duplicates of Western Tertiary and Cretaceous Plants presented to the Museum by the Smithsonian, have been identified by Mr. Lesquereux, who has also examined a small collection made for the Museum by the Rev. A. Lakes, and a collection of Carboniferous Plants from Cannelton.

Mr. Sternberg, after making the collections of the Dakota group, moved further West, and has explored some of the well known Vertebrate fossil localities of Western Kansas. The collections of these explorations have arrived at the Museum; a more detailed report of their contents cannot be given at present, until they have been more carefully examined.

I may also mention among the valuable additions to the collections the invoices of Captain Cole of the West Indian Telegraph Company. Besides a couple of species of Rhizocrinus and some interesting Comatulæ and Corals, he has sent us a couple of good specimens of Umbellularia from the comparatively shallow depth of 160 fathoms, off the south coast of Porto Rico.

During the months of March and April I explored the Tortugas under the auspices of the United States Coast Survey. The late Superintendent, the Hon. Carlile P. Patterson, placed at my disposal a small steam launch, and I hoped to be able to explore the surface fauna of the Gulf Stream, and ascertain the part taken by the innumerable surface organisms in building up the base (plateau) upon which the coral reefs of Florida have been raised. Unfortunately the weather was not favorable for surface and pelagic work, and little could be accomplished in that direction. I have given an account of the work done by myself and my assistant, Mr. Fewkes, in Letter No. 5, addressed to Mr. Patterson and published in the Museum Bulletin. To Lieutenant-Commander Winn and Lieutenant-Commander Wright I am greatly indebted for the facilities they placed at my command. Captain Scammon, of the Revenue Cutter "Dix," was also authorized by the Treasury Department to assist us as far as practicable. On my way across from Jacksonville to Cedar Keys I had the opportunity cursorily to examine a section of the peninsula. Dr. Smith has described the limestones of the central and western part as belonging probably to the Vicksburg age, flanked only on the very shore by the newer postpleiocene limestones. From the rapid examination I was able to make, I am more inclined to consider that some of the younger limestones have been deposited further inland along the sides of the backbone described by Dr. Smith, and forming there elevated coral reefs similar to those now found in the Everglades. But a very careful survey of the Peninsula of Florida is needed to ascertain how far it extended south during the Vicksburg period, and what portion of it consists of the later limestones and is formed by ancient coral reefs.

ALEXANDER AGASSIZ, *Curator.*

APPENDIX.

I.

List of persons appointed tutors, instructors, or assistant professors since 1860 and no longer in the service. Annual appointments are not included.

A. T. Bates, tutor 1860–65. Became a lawyer.

Henry J. Clark, assistant professor 1860–65. Naturalist. Died 1873.

G. W. C. Noble, tutor 1861–65. Private school in Boston.

E. K. F. Krauss, instructor 1861–68. Teacher.

J. E. Hudson, tutor 1862–65. Became a lawyer.

F. G. Bromberg, tutor 1863–65. Returned to Alabama. Postmaster of Mobile. Member of Congress.

Isaac Flagg, tutor 1865–69, assistant professor 1869, resigned 1869. Professor in Cornell University.

E. P. Seaver, tutor 1865–69, assistant professor 1869–74. Master of English High School and Superintendent of Schools, Boston.

G. A. Hill, tutor 1865–71, assistant professor 1871–76. Author and teacher.

E. J. Cutler, assistant professor 1865–70, professor 1870. Died 1870.

Prentiss Cummings, tutor 1866–70. Became a lawyer.

J. S. Lombard, assistant professor 1866–70. A specialist in physiology.

T. S. Perry, tutor 1868–72. Writer and lecturer.

G. V. Leverett, instructor 1868–70. Became a lawyer.

W. H. Appleton, tutor 1869–70. Professor in Swarthmore College.

T. M. Drown, instructor 1869–71. Metallurgist.

W. H. Pettee, instructor 1869–71, assistant professor 1871–75. Professor in the University of Michigan.

J. R. Dennett, assistant professor 1869–72. Journalist. Died 1874.

William Everett, tutor 1870–73, assistant professor 1873–79. Master of Adams Academy.

F. E. Anderson, tutor 1870–73, assistant professor 1873–78. Went to Europe, and died 1880.

A. I. Fiske, tutor 1870–73. Master in Boston Latin School.

Ellis Peterson, assistant professor 1870–72. Principal of Worcester High School, and Supervisor of Schools, Boston.

Henry Adams, assistant professor 1870–77. Author.

N. W. Hawes, assistant professor 1870–79. Dentist.

F. G. Sanborn, instructor 1871–73. Entomologist.

P. J. Boris, instructor 1871–73. Teacher.

J. C. Bartlett, instructor 1871–74. Principal of Taunton High School. Engineer.

G. T. Dippold, instructor 1871–73. Teacher. Instructor in Boston University.

E. B. Dalton, instructor 1871–72. Died 1872.

A. W. Gould, tutor 1873–74, 1878–81. Instructor in Williams College.

I. B. Barker, tutor 1874–75. Died 1875.

W. G. Hale, tutor 1874–75, 1877–80. Professor in Cornell University.

W. H. Rollins, instructor 1874–78. Dentist.

G. R. Briggs, tutor 1875–81. Student and author.

R. W. Willson, tutor 1875–81. Assistant in Winchester Observatory, Yale College.

W. E. Story, tutor 1875–76. Associate at the Johns Hopkins University.

O. Faulhaber, tutor 1875–78. Teacher.

C. E. Hamlin, instructor 1875–77. Assistant in the Museum of Zoölogy.

L. R. Briggs, tutor 1878–81. Candidate for A. M.

J. H. Wheeler, tutor 1880–81. Professor in Bowdoin College.

II.

List of persons appointed tutors or instructors since 1860, and still in the service as tutors or instructors. Annual appointments are not included.

C. H. Moore, instructor 1871– Drawing and Design.

C. B. Porter, instructor 1871– Surgery.

F. I. Knight, instructor 1872– Laryngoscopy.

J. C. Warren, instructor 1872– Surgery.

H. Howland, tutor 1872–74, (annual) instructor 1879–82. Torts.

J. G. Croswell, tutor 1874–78, 1881– Greek and Latin.

W. B. Hills, instructor 1874– Chemistry.

W. L. Richardson, instructor 1874– Obstetrics.

F. W. Dean, tutor 1875– Engineering.

M. E. Wadsworth, instructor 1874–77. Mineralogy and Geology. Assistant (1878) in the Museum of Zoölogy.

E. Young, instructor 1875–78, 1880– History.

S. M. MacVane, instructor 1876– History.

W. H. Baker, instructor 1877– Gynaecology.

E. S. Sheldon, tutor 1878, instructor 1881– Modern Languages.

F. Lutz, tutor 1878– German.

H. N. Wheeler, instructor 1878– Mathematics.

E. Emerton, instructor 1878– History.

W. M. Davis, instructor 1879– Geology.

Ko-Kun-Hua, instructor 1879– Chinese.

E. E. Phillips, tutor 1880– Greek and Latin.

Henry Preble, tutor 1881– Greek and Latin.

E. L. Mark, instructor 1881– Zoölogy.

III.

THE following extract is from the will of THOMAS CARLYLE, dated February 6, 1873. The will contains no other public bequest.

"Having with good reason, ever since my first appearance in Literature, a variety of kind feelings, obligations, and regards towards New England, and indeed long before that a hearty good will, real and steady, which still continues, to America at large, and recognizing with gratitude how much of friendliness, of actually credible human love, I have had from that Country, and what immensities of worth and capability I believe and partly know to be lodged, especially in the silent classes there, I have now after due consultation as to the feasibilities, the excusabilities of it, decided to fulfil a fond notion that has been hovering in my mind these many years; and I do therefore hereby bequeath the books (whatever of them I could not borrow, but had to buy and gather; that is, in general whatever of them are still here) which I used in writing on Cromwell and Friedrich, and which shall be accurately searched for and parted from my other books, to the President and Fellows of Harvard College, City of Cambridge, State of Massachusetts, as a poor testimony of my respect for that *alma mater* of so many of my Trans-Atlantic friends, and a token of the feelings above indicated towards the Great Country of which Harvard is the Chief School. In which sense I have reason to be confident that the Harvard authorities will please to accept this, my little bequest, and deal with it, and order and use it, as to their own good judgment and kind fidelity shall seem fittest. A certain symbolical value the bequest may have, but of intrinsic value as a collection of old books it can pretend to very little. If there should be doubt as to any books coming within the category of this bequest, my dear Brother John, if left behind me as I always trust and hope, who already knows about this Harvard matter, and who possesses a Catalogue or List drawn up by me, of which the counterpart is in possession of the Harvard authorities, will see it for me in all points accurately done. In regard to this, and to all else in these final directions of mine, I wish him to be regarded as my second self, my surviving self. . . .

T. CARLYLE."

IV.

REPORT OF THE ASSISTANT IN CHARGE OF THE HERBARIUM AND MUSEUM OF THE ARNOLD ARBORETUM FOR THE YEAR ENDING AUGUST 31, 1881.

WORK in the Museum and Herbarium has continued throughout the year, and the value of the Herbarium as a reference collection has been considerably increased.

During the year, 1,610 specimens (750 species) of plants have been prepared at the Herbarium or received by donation, including a large number of cones, nuts, and other tree products.

There have been received, in addition to these, 330 specimens (190 species) of woods, including a collection of upwards of 50 specimens of foreign woods sent from the Royal Gardens, Kew, England. Of these, many are large logs or fine specimens, illustrating peculiar qualities or remarkable formations of the wood.

There have been received a number of photographs of forest scenery and ligneous vegetation; also, various specimens illustrating the economic value and properties of trees.

During the year, 208 specimens (162 species) of plants and woods have been distributed among twenty-two institutions and private individuals in the United States and Europe.

During the year, 1,650 specimens (850 species) of plants have been poisoned and mounted on herbarium sheets, in conformity with the plan adopted last year and in general use in other large collections.

Ten more cabinets have been added, and these, as well as those previously purchased, are all now nearly filled. The *Coniferae*, which had previously received only temporary arrangement, are now arranged in the cabinets, each species being placed in a separate box, in order that the large fruits may be kept with, and easy reference made to, the foliage and flowers of the species. A supplementary set of cones and other tree fruits have been arranged in a large museum case, to exhibit the general collection more conveniently, each species being mounted on a separate tablet.

The calendar of flowering of the trees and shrubs in the vicinity of Boston, kept for the season of 1880, has been published in the transactions of the Massachusetts Horticultural Society. A similar calendar has been kept during the current year.

JOHN ROBINSON, *Assistant in charge.*

V.

SUMMARY OF STUDENTS IN THE UNIVERSITY AT THE BEGINNING OF THE ACADEMIC YEAR 1880–81.

College,		
Seniors	195	
Juniors	186	
Sophomores	204	
Freshmen	243	
		828
Unmatriculated Students		15
Lawrence Scientific School		37
Bussey Institution		6
Dental School		18
Medical School		241

Law School	156
Divinity School	23
Candidates for the Degrees of A.M., Ph.D., and S.D.	34
Holders of Fellowships	7
Resident Graduates not Candidates for a Degree	2
	1367

Persons who attended the Summer Courses in Science in 1881.

Chemistry	17	
Botany	10	
		27

Number of Certificates issued to Women in 1881.

Preliminary Examination	8
Advanced Examination	9

VI.

ACADEMIC HONORS FOR THE YEAR 1880–81.

COMMENCEMENT, JUNE 29, 1881.

Orations.

Arthur Orcutt Jameson,
James Bettner Ludlow,
William Coolidge Lane,
Charles Bingham Penrose,
Gardiner Martin Lane,
Frederic Joaquim Barbosa Cordeiro,
Alfred Jaretzki,
Henry Edwards Scott,
Edmund Allen Whitman,
Hermann Ivah Thomsen,
Curtis Guild,
Edward Lathrop Rand,
Charles Wendell Townsend,
George Albert Burdett.

Dissertations.

James Robbins Howe,
Arthur Wellington Roberts,
Farley Brewer Goddard,
John Norton Johnson,
John Wallace Suter,
Henry Leverett Nelson,
James Parker Parmenter,
Otto Mueller,
Joel Herbert Seaverns,
William Loring Worcester,
John Stevens Melcher,
John Edward Maude,
Winthrop Howland Wade,
Frank Clinton Fernald,
John Frank Davis,
Chester Allyn Reed,
John Carew Rolfe,
Henry Olmstead Rolfe,
Richard Edwards,
George Phineas Upham,
Boies Penrose,
William Henry Coolidge,
Merle St. Croix Wright,
Charles Howard Atkins,
Garry De Nerville Hough,
Abbot Low Mills,
Marshall Perry Slade,
Edward Collins Porter,
John Amory Jeffries,
Oliver Mayhew Whipple Huntington,
George Angier Gordon,
George Dickson Markham.

Disquisitions.

Joseph Elwyn Maxfield,
Frederic William Stuart,
Alanson Joseph Abbe,
Edward Winslow Brewer,
John Prescott Farnsworth,
Charles Turner Dazey,
Morris Hicky Morgan,
Frederick Silas Gregory Reed,
Robert Williamson Lovett,
Irving Gardiner Stanton,
John Gerrish Wood,
Eugene Charles Upton,
Charles Henry Leonard Delano,
Louis Brackett Carr,
Frederic Erastus Crawford,
Thomas Parker Ivy,
Samuel Hopkins Spalding,
Charles Andrews Mitchell,
Prescott Evarts,
Mars Edward Wagar,
William Henry Robinson,
Eugene Yancey Cohen,
Frank Bellows Allen,
Eugene Dexter Hawkins,
John William O'Callaghan,
Godfrey Michael Hyams,
Frank Woods Baker,
Arthur Carlton Jelly,
John Allen Collier Wright,
Ezra Henry Baker,
George Frederic Joyce,
Paul Barron Watson,
John Cummings Munro,
Charles Robert Sanger,
Addison Sanford Thayer,
Joseph Emerson Hadley,
Charles Hooper Jackson,
Henry Ellison Seaver,
Charles Fellows Squibb,
Joseph Henry Adams,
Richard Clipston Sturgis,
Howard Preston Haines,
William Roscoe Thayer,
Samuel Wylie,
Algernon Coolidge,
George Allen Staples,
George Knowles Swinburne,
James Bliss,
Frederic William Sharon,
Edward Roscoe Merrill,
Frederic Otis Barton,
James Leonard Paine,
Heyliger Adams De Windt,
George Henry Williams,
Robert Sturgis.

HONORS AT GRADUATION.

In Classics.

Arthur Orcutt Jameson,	Highest Honors.
Farley Brewer Goddard,	Honors.
Alfred Jaretzki,	Do.
John Norton Johnson,	Do.
Gardiner Martin Lane,	Do.
James Bettner Ludlow,	Do.
Henry Leverett Nelson,	Do.
Arthur Wellington Roberts,	Do.
John Carew Rolfe,	Do.
Henry Edwards Scott,	Do.

In Philosophy.

Charles Howard Atkins,	Honors.
George Angier Gordon,	Do.
John Edward Maude,	Do.
Edward Collins Porter,	Do.

In History.

Henry Edwards Scott,	Highest Honors.
George Dickson Markham,	Honors.
Abbot Low Mills,	Do.

In Mathematics.

Frederic Joaquim Barbosa Cordeiro,	Highest Honors.
Hermann Ivah Thomsen,	Do.

In Natural History.

Charles Wendell Townsend,	Highest Honors.
Otto Mueller,	Honors.
John Amory Jeffries,	Do.

In Physics.

Charles Bingham Penrose,	Highest Honors.

In Chemistry.

Garry De Nerville Hough,	Honors.
Oliver Mayhew Whipple Huntington,	Do.
Marshall Perry Slade,	Do.
Edmund Allen Whitman,	Do.

In Music.

George Albert Burdett,	Highest Honors.

Honorable Mention at Graduation.

Alanson Joseph Abbe. *Chemistry.*
Joseph Henry Adams. *Philosophy; History.*
Frank Bellows Allen. *History.*
Charles Howard Atkins. *Philosophy.*
Ezra Henry Baker. *Political Economy.*
Frank Woods Baker. *Philosophy.*
Frederick Otis Barton. *History.*
Walter Van Rensselaer Berry. *French.*
James Bliss. *Philosophy.*
Edward Winslow Brewer. *History.*
George Albert Burdett. *Music.*
Eugene Yancey Cohen. *History.*
Algernon Coolidge. *Natural History.*
William Henry Coolidge. *History.*
Frederic Joaquim Barbosa Cordeiro. *English Composition; Mathematics; Physics.*
Frederic Erastus Crawford. *Philosophy.*
John Francis Davis. *German; English Composition; History.*
Charles Turner Dazey. *German; English Composition.*
Heyliger Adams De Windt. *Natural History.*
Richard Edwards. *Philosophy.*

Prescott Evarts. *Greek; Latin.*
John Prescott Farnsworth. *Natural History.*
Frank Clinton Fernald. *Natural History.*
Charles Henry Wheelwright Foster. *Chemistry.*
Farley Brewer Goddard. *Greek; Latin; Philosophy.*
George Angier Gordon. *Philosophy.*
Herbert Eveleth Greene. *Latin.*
Curtis Guild. *English; French; English Composition; History.*
Joseph Emerson Hadley. *Mathematics.*
Howard Preston Haines. *Chemistry.*
Frederic Wood Hardy. *Philosophy.*
Eugene Dexter Hawkins. *Philosophy.*
Garry De Nerville Hough. *Chemistry.*
James Robbins Howe. *Greek; Latin.*
Oliver Mayhew Whipple Huntington. *Chemistry.*
Godfrey Michael Hyams. *Chemistry.*
William Hyde. *Natural History.*
Thomas Parker Ivy. *English Composition; History.*
Charles Hooper Jackson. *Philosophy; History.*
Arthur Orcutt Jameson. *Greek; Latin; English Composition; Mathematics.*
Alfred Jaretzki. *Greek; Latin; English Composition; History.*
John Amory Jeffries. *Natural History.*
Arthur Carlton Jelly. *Chemistry.*
John Norton Johnson. *Greek; Latin; English Composition.*
Henry Olmstead Jones. *German.*
George Frederic Joyce. *Chemistry.*
Frederic Theron Knight. *Philosophy.*
Gardiner Martin Lane. *Greek; Latin; English Composition.*
William Coolidge Lane. *Natural History.*
Robert Williamson Lovett. *Natural History.*
James Bettner Ludlow. *Greek; Latin; Fine Arts.*
George Dickson Markham. *History.*
Edward Palmer Mason. *Philosophy; Music.*
John Edward Maude. *Philosophy; History; Political Economy.*
Joseph Elwyn Maxfield. *Mathematics.*
John Stevens Melcher. *Greek; English Composition; History.*
Edward Roscoe Merrill. *Philosophy.*
Abbot Low Mills. *History.*
Charles Andrews Mitchell. *German.*
Morris Hicky Morgan. *Latin.*
Otto Mueller. *Chemistry; Natural History.*
John Cummings Munro. *Music.*
Henry Leverett Nelson. *Greek; Latin.*
John William O'Callaghan. *Greek.*
James Leonard Paine. *Natural History.*
James Parker Parmenter. *Greek; Latin.*
Boies Penrose. *Political Economy.*
Charles Bingham Penrose. *English Composition; Mathematics; Physics.*

Edward Collins Porter. *Philosophy.*
Edward Lathrop Rand. *Latin; English Composition.*
Chester Allyn Reed. *History.*
Frederick Silas Gregory Reed. *Philosophy; History.*
Arthur Wellington Roberts. *Greek; Latin.*
William Henry Robinson. *Greek.*
John Carew Rolfe. *Greek; Latin.*
Charles Robert Sanger. *Chemistry.*
Henry Edwards Scott. *Greek; Latin; English Composition; History.*
Henry Ellison Seaver. *Greek; Latin.*
Frederic William Sharon. *History.*
Marshall Perry Slade. *Chemistry.*
Richard Sprague. *History.*
Charles Fellows Squibb. *Natural History.*
Irving Gardiner Stanton. *Greek.*
George Allen Staples. *Greek.*
Roderick Stebbins. *Philosophy.*
Frederic William Stuart. *Chemistry; Natural History.*
Richard Clipston Sturgis. *Philosophy.*
Robert Sturgis. *Natural History.*
John Wallace Suter. *Latin; Philosophy.*
George Knowles Swinburne. *Chemistry.*
Addison Sanford Thayer. *Natural History.*
William Roscoe Thayer. *Italian; Spanish.*
Hermann Ivah Thomsen. *Mathematics; Chemistry.*
Charles Wendell Townsend. *Natural History.*
George Phineas Upham. *History.*
Eugene Charles Upton. *Greek; Latin.*
Winthrop Howland Wade. *History.*
Mars Edward Wagar. *German; French.*
Paul Barron Watson. *Philosophy.*
Horace Leslie Wheeler. *Fine Arts.*
Edmund Allen Whitman. *Greek; History; Chemistry.*
Frank Smith Williams. *History.*
George Henry Williams. *Italian; Spanish.*
John Gerrish Wood. *Mathematics.*
William Loring Worcester. *Chemistry; Natural History.*
John Allen Collier Wright. *Philosophy.*
Merle St. Croix Wright. *English; German.*
Samuel Wylie. *Philosophy.*

SECOND-YEAR HONORS.

In Classics.

Juniors:

Frank Gaylord Cook,	Honors.
Charles Henry Goldthwaite,	Do.
Russell Whitman,	Do.

Sophomores:

Archie Livingstone Hodges,	Highest Honors.
Frederick Nichols,	Do.
Herbert Putnam,	Do.
John Henry Wigmore,	Do.
Luther Atwood,	Honors.
Angell Boss Babbitt,	Do.
Edward Twisleton Cabot,	Do.
Joseph Randolph Coolidge,	Do.
John William Fox,	Do.
Frank Elwood Jennison,	Do.
Frank Warton Kaan,	Do.
Patrick Michael Keating,	Do.
George Paul Keith,	Do.
Herbert Marshall Lloyd,	Do.
Morris Loeb,	Do.
George Emerson Lowell,	Do.
William Hussey Page,	Do.
Oscar Edward Perry,	Do.
Arthur Henry Woodbury,	Do.

In Mathematics.

Sophomores:

George William Evans,	Highest Honors.
Mellen Woodman Haskell,	Do.
Alfred Church Lane,	Do.
Robert Emmet O'Callaghan,	Do.

VII.

PRIZES.

Deturs.

The following students received books, called "Deturs," from the foundation of Edward Hopkins, for excellence in scholarship:—

Freshmen of 1879–80.

Robert Gordon Butler,
Edward Cummings,
George Henry Heilbron,
Fletcher Ranney,
John Henry Wigmore,
Arthur Henry Woodbury,
Charles Pomeroy Worcester.

Freshmen of 1880–81.

Charles Francis Aiken,
Hartley Frederic Atwood,
Benjamin Edward Bates,
Heinrich Conrad Bierwirth,

Josiah Bridge,
Romeo Green Brown,
Frederic Story Bunker,
Thomas Jefferson Coolidge,
William Wallace Fenn,
Theodore Longfellow Frothingham,
William Amory Gardner,
James Newton Garratt,
Lewis Edwards Gates,
Arthur Gillespie Hatch,
Eugene Hamlin Hatch,
Harry Hubbard,
James Richard Jewett,
Walter Perry Johnson,
Gilbert Norris Jones,
Edward Kirk Keep,
Frederic Randolph King,
Reuben Whittle Lovering,
Edward Chandler Marston,
John Ulric Nef,
John Prentiss,
George William Sawin,
George Andrew Stewart,
Correa Moylan Walsh,
Hollis Webster.

Bowdoin Prizes.

William Schofield, of the Class of 1879,
Walter Allen Smith, of the Class of 1880,
Thomas Parker Ivy, of the Class of 1881,
George Lyman Kittredge, of the Class of 1882,
Frank Gaylord Cook, of the Class of 1882.

Boylston Prizes for Elocution.

First Prizes.

Henry John Dixon Jones, of the Class of 1881,
Edmund Seahon Perin, of the Class of 1882.

Second Prizes.

Paul Barron Watson, of the Class of 1881,
Gustavus Tuckerman, of the Class of 1882,
Burton Monroe Firman, of the Class of 1882.

Lee Prizes for Reading.

Sophomores.

Samuel Atkins Eliot,
William Wallace Fenn,
Hollis Webster,
Edward Wheeler Frost,
William Belden Noble.

Freshmen.

Greenough Thayer, from Phillips Andover Academy,
Lucius Junius Henderson, from a private tutor,
Walter Folger Greenman, from the Chelsea High School,
William Kinnicutt Draper, from Adams Academy,
Edward Blake Young, from the Cambridge High School.

VIII.

DEGREES.

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Bachelors of Laws	18
Doctors of Medicine	60
Doctors of Dental Medicine	5
Civil Engineer	1
Bachelor of Science	1
Bachelors of Agriculture	3
Doctors of Philosophy	2
Doctor of Science	1
Masters of Arts	7

HONORARY DEGREES.

Master of Arts.

Francis Cogswell, of Cambridge.

Doctors of Laws.

James Denison Colt.
George William Curtis.

IX.

COMMITTEES OF THE OVERSEERS FOR 1881.

To visit the University.

President of the Board of Overseers.
His Excellency the Governor.
His Honor the Lieutenant-Governor.
The President of the Senate.
The Speaker of the House of Representatives.
The Secretary of the Board of Education.
The Secretary of the Board of Overseers.
The Chairman of each of the Visiting Committees.

To visit the Academical Department.

Edwin P. Seaver.
Alexander McKenzie.
Edward E. Hale.
Theodore Lyman.
Le Baron Russell.
Francis G. Peabody.
Oliver F. Wadsworth.
John Noble.
Roger Wolcott.
J. Lewis Stackpole.
Arthur Dexter.
J. B. Warner.

Robert D. Swett.
John Fisher.
Ralph W. Emerson.
Henry Lee.
Moorfield Storey.
John T. Morse, Jr.
Robert M. Morse, Jr.
J. Elliot Cabot.
George B. Chase.
C. C. Perkins.
Thomas W. Higginson.
S. Lothrop Thorndike.
John S. Dwight.
H. C. Lodge.
William H. Niles.
W. F. Apthorp.
J. O. Means.
J. H. Means.
E. A. Park.
Francis Blake, Jr.
William Watson.
Robert Amory.
Russell Gray.
George L. Osgood.
J. D. Runkle.
Percivall Lowell.
Charles G. Loring.
Thomas B. Curtis.
Richard M. Hodges.
Charles Francis Adams.
W. B. Swett.
George B. Bradford.
J. T. G. Nichols.
Henry W. Foote.
W. R. Ware.
H. Wheatland.
D. F. Lincoln.
W. J. Rolfe.
C. P. Cranch.
D. B. Hagar.
E. G. Porter.
W. Higginson.
Thomas Davidson.
F. B. Sanborn.
George V. Leverett.
Charles R. Cummings.
Prentiss Cummings.
Walter C. Cabot.
E. T. Williams.
Charles P. Curtis.
Abbott Lawrence.
Brooks Adams.
Robert E. Balsa.
Henry Sedgwick.
Julius Dexter.
J. B. Torricelli.
Edward Edes.
Alpheus Hyatt.
David Sears.

To visit the Divinity School.

Phillips Brooks.
Francis G. Peabody.
James Freeman Clarke.
Edward E. Hale.
Alexander McKenzie.
Edward H. Hall.
Thomas Hill.
Adams Ayer.
A. B. Mussey.
F. Johnson.
W. Higginson.
H. W. Foote.
C. F. Dole.
Edward A. Washburn.

To visit the Law School.

John Lowell.
Leverett Saltonstall.
George O. Shattuck.
O. W. Holmes, Jr.
William G. Russell.
Darwin E. Ware.
Peter B. Olney.
Edmund Wetmore.
W. C. Endicott.
R. D. Smith.
Moorfield Storey.
Francis E. Parker.
E. R. Hoar.
Francis C. Barlow.
Charles C. Beaman.

To visit the Lawrence Scientific School, the Bussey Institution, the Museum of Comparative Zoölogy, and the Peabody Museum of American Archaeology and Ethnology.

Morrill Wyman.
Theodore Lyman.
Charles R. Codman.
R. M. Hodges.
Stephen Salisbury.
Edwin P. Seaver.
T. Jefferson Coolidge.
William E. Whorten.
Clemens Herschel.
Thomas C. Clarke.
B. S. Rotch.
Robert W. Hooper.
Gustavus Hay.
James Lawrence.
Chauncey Whitaker.
Charles O. Thompson.
Samuel M. Felton.
Alphonse Fteley.
Ernest W. Bowditch.

To visit the Medical and Dental Schools.

Le Baron Russell.
Morrill Wyman.
R. M. Hodges.
Samuel A. Green.
Joseph Sargent.
Frederick Winsor.
John C. Dalton.
Austin Flint.
John G. Park.
George C. Shattuck.
Hall Curtis.
James L. Little.
Samuel L. Abbott.
Samuel M. Weld.
Algernon Coolidge.

To visit the Observatory.

James Freeman Clarke.
Charles Francis Adams.
William Amory.
J. I. Bowditch.
John C. Palfrey.
Robert C. Winthrop.
Charles F. Choate.
Frederick O. Prince.
Simon Newcomb.
Charles R. Codman.
Amos A. Lawrence.
Francis H. Peabody.
George I. Alden.
Robert T. Paine.
J. R. Coolidge.
Alvan Clark.
Augustus Lowell.
J. Montgomery Sears.

To visit the Library.

Phillips Brooks.
O. W. Holmes, Jr.
J. O. Sargent.
Samuel A. Green.
Charles A. Cutter.
Samuel F. Haven.
Samuel S. Green.
R. W. Emerson.
D. A. Goddard.
H. G. Denny.
H. F. Jenks.
Mellen Chamberlain.
John M. Brown.
John Fiske.
John T. Morse, Jr.
E. R. Hoar.
W. W. Greenough.
George W. Wales.
Charles C. Smith.
Stephen Salisbury, Jr.
Samuel Eliot.
F. W. Balch.
Charles Deane.
James T. Fields.
George Dexter.
George H. Moore.

On the Treasurer's Accounts.

Leverett Saltonstall.	Henry Lee.
John Lowell.	Amos A. Lawrence.
Charles H. Parker.	J. M. Spelman.
Nathaniel Silsbee.	George B. Chase.

On Elections.

Henry W. Paine.	Moorfield Storey.
George O. Shattuck.	John Lowell.
William C. Endicott.	

On Reports and Resolutions.

William G. Russell.	William C. Endicott.
Henry W. Paine.	Robert D. Smith.
William Amory.	Darwin E. Ware.
Francis E. Parker.	

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HARVARD COLLEGE.

TREASURER'S STATEMENT.

1881.

TREASURER'S STATEMENT.

To the Board of Overseers of Harvard College:—

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending August 31, 1881, in the usual form.

The Funds separately invested are as follows: —

	Principal.	Income.
UNIVERSITY.		
Leonard Jarvis Fund (part of),		
Real Estate in Baltimore, sold during the year,		$643.47
COLLEGE.		
Bowditch Scholarships (part of),		
$70,000, Massachusetts 5% Bonds,	70,000.00	3,500.00
Bassett Scholarships (part of),		
Mortgage,	5,000.00	275.00
Pennoyer Scholarships (part of),		
Pennoyer Annuity in England,	4,444.44	277.50
Rumford Professorship (part of),		
French Rentes,	10,000.00	577.94
Jonathan Phillips Fund,		
Mortgage,	10,000.00	525.00
Daniel H. Peirce Fund (part of),		
Mortgage,	12,375.62	742.54
Samuel Ward's Gift,		
Ward's (Bumkin) Island, Boston Harbor,	1,200.00	50.00
Botanic Garden Fund (part of),		
$17,000 New York Central R. R. Bonds,	17,000.00	1,020.00
LIBRARY.		
Charles Minot Fund (part of),		
$60,000, Buffalo, Bradford, & Pittsb. R. R. Bonds,	60,000.00	4,200.00
Ichabod Tucker Fund (part of),		
Policy of Mass. Hospital Life Insurance Co.,	5,000.00	200.00
Amounts carried forward,	$195,020.06	$12,011.45

Amounts brought forward, ...	$195,020.06	$12,011.45
SCIENTIFIC SCHOOL.		
James Lawrence Fund,		
$50,000, United States 6% Bonds, sold during the year,		3,000.00
John B. Barringer Fund (part of),		
40 shares Schenectady Bank Stock, ...	2,200.00	200.00
MUSEUM OF COMPARATIVE ZOÖLOGY.		
Gray Fund for Museum,		
Manufacturing Co.'s and R. R. notes, paid during the year,		2,893.75
Sturgis Hooper Fund (part of),		
$20,000, Erie Basin Dock and Warehouse Bonds, paid off during the year, ...		4,025.00
Agassiz Memorial Fund (part of),		
Personal notes (endorsed), ...	29,658.75	1,100.00
OBSERVATORY.		
Anonymous gift (now used to pay annuities),		
$1,000, Michigan South'n & No. Indiana R.R. Bond,	1,000.00	70.00
$2,000, Cincinnati Municipal Bonds, ...	2,000.00	140.00
$2,000 Minneapolis Municipal Bonds, ...	2,000.00	160.00
50 shares Pittsburg, Fort Wayne, & Chicago, R. R. Stock, ...	5,000.00	350.00
SPECIAL FUNDS.		
Bussey Trust,		
Real Estate, ...	413,092.80	13,903.04
Gray Fund for Engravings (part of),		
$15,000, United States 5% Bonds, sold during the year,		562.50
Robert Troup Paine Fund (accumulating),		
$21,000 Mass. 5% Bonds, ...	24,050.00	754.03
	$674,021.61	$39,169.77

The other Funds of the College are invested as a whole. These investments, with the income thereof, are as follows:

Investments.	Principal, September 1, 1880.	Principal, August 31, 1881.	Income.
Notes, Mortgages, &c., ...	$876,103.74	$711,103.74	$48,352.94
Railroad Bonds and Premiums, . . .	889,598.70	972,532.48	49,432.06
Railroad Stock, ...	32,150.22	32,150.22	3,295.00
New Boston Coal Mining Co. Bonds,	9,000.00	9,000.00	350.00
Bank Stock, ...	63,964.00	63,964.00	4,496.73
Manufacturing Stock, ...	102,058.29	102,058.29	10,375.00
Real Estate, ...	905,511.30	1,396,073.30	51,700.06
Unoccupied Lands, ...	90,027.79	75,487.79	
Brattle Street Reversion, ...	1,000.00	1,000.00	
Amounts carried forward,	$2,969,414.04	$3,363,369.82	$168,001.79

Amounts brought forward,	$2,969,414.04	$3,363.369.82	$168,001.79
Advances to Scientific School, . . .	7,946.49	4,905.14	476.79
“ “ Dental School, ...	16,132.17	15,827.74	967.93
“ “ Bussey Trust, ...	40,566.13	40,566.13	2,028.31
“ “ Dining Hall Association,	38,732.16	37,232.16	2,328.93
“ “ Scudder's Catalogue, .	347.36	233.42	
“ “ Agassiz Building Fund,	6,559.50		155.39
“ “ Chinese Subscription,	311.53	374.38	
“ for altering Appleton Chapel,	2,859.62	2,859.62	
“ “ repairing College Wharf,	777.46	411.88	54.42
Term Bills not collected Aug. 31, 1881,	75,644.85	73,423.36	
Baring Brothers & Co., ...	348.27		26.73
Cash in Suffolk National Bank, .	3,174.94	19,063.38	
Cash in hands of Bursar, ...	1,071.06	1,131.61	
Totals of general investments,	3,163,885.58	3,559,398.64	174,035.29
Totals of special investments,	795,670.50	674,021.61	39,169.77
Amounts, . . .	$3,959,556.08	$4,233.420.25	$213,205.06

During the year, $200,000 of Republican Valley R. R. bonds have been converted into $200,000 of Burlington & Missouri in Nebraska R. R. bonds. The gains on sale of Eastern R. R. bonds and Chicago, Burlington, & Quincy R. R. bonds, which were bought some years ago, amounting to $14,540, have been credited to the account of "unoccupied lands," as the most suitable way of restoring to the Funds sharing in "general investments" gains which belong to their capital. The gain on sale of $100,000 Atchison, Topeka, & Santa Fe R. R. 5's, which were bought last year, amounting to $7,578.75, has been credited to the account of "railroad bond premiums" as a partial offset to the premium paid on purchase of the first mortgage bonds of the same road. The account of "railroad bond premiums" has been diminished during the year by the sum of $2,550, which was taken from the interest received upon $255,000 of seven per cent bonds bought before Sept. 1, 1880; and the same account has been increased by the amount of premiums paid on $272,000 of seven per cent railroad bonds bought during the year. The purchases of railroad bonds during the year have been made at prices which yield on the average a little more than five per cent income after allowing for sinking the premiums before maturity. The bonds were all of the highest class, and most of them provide for payment of both interest and principal in gold. All other changes in the investments of the University are accounted for by the receipts and payments hereinafter stated in detail. The most important investment has been the purchase of the Gray estate, on the corner of Washington and Summer Streets, from the executors of the late John C. Gray. Although the price paid for this estate was large, the fact that the College owned the adjoining store on Washington Street, and the extreme price at the time of all other investments suitable for the College, decided the Corporation to make the purchase with the hope that in the long run such a property could be made to pay a fair return. The amount still held by the Corporation in short-dated notes and mortgages is considerable, and the improvement in the market-value of money since the end of our financial year gives hope that a more favorable time for investment is at hand.

The net income of the general investments ($174,035.29) has been divided at the rate of $5\frac{36}{100}$ per cent among the Funds to which they belong, except the Sever Hall and Medical School Building Funds, which have recived a special rate of four per cent on their balances during the period of construction. The balance of $12.17 has been placed to the credit of the University account.

The rate of income this year as compared with that for 1879–80 shows a falling off of $\frac{29}{100}$ of one per cent, due to the extraordinarily low rate of interest which prevailed during the greater part of the year, and to large outlays upon the productive real estate. Although most of these outlays were for improvements, they could not safely be charged to capital, as competition with newer buildings is steadily raising the standard required to satisfy good tenants. It is probable that the rate of income for 1881–82 will be above five per cent, but the Corporation cannot, without taking undue risk, hope to get an average rate much above that paid upon the best mortgages or railroad bonds, and some accident may at any time cause a serious loss of income.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments: —

Interest on funds for		
University Salaries and Expenses,	$20,969.85	
College Expenses,	1,688.40	
Library,	1,387.66	
College Salaries,	28,471.48	
Gymnasium, and repairs on College buildings,	none.	
College Term bills,	157,869.63	
Sundry cash receipts,	6,182.31	
		216,569.33
Expended for		
University Salaries and Expenses,	$31,975.77	
College Expenses,	37,225.24	
Library Salaries and Expenses (not books),	21,194.52	
College Salaries,	140,003.51	
Gymnasium Expenses,	4,542.50	
Repairs and insurance on College Buildings not valued on Treasurer's books,	16,096.98	
		251,038.52
Balance, showing deficit for the year, which has been charged off to Stock Account,		$34,469.19

In the University, College, and Library accounts the loss of income from invested property, offset only in part by a gain from tuition fees, largely increased expenses for the heating and care of buildings, an increase of salaries, due both to promotions and new appointments, and very heavy outlays for the completion of the improvements on the College Yard and buildings which were mentioned in detail in the last annual report, have left a deficit of $34,469.19, which sum has been taken from the unrestricted capital of the University. This deficit is the necessary result of steadily improving the quality of the work done by the University while the income has been falling off. The pressure upon the Corporation to make improvements in every direction is constant, and the improvements recently made were much needed. They were undertaken at a time when there had been no serious deficit for several years, and when there was fair ground for hope that they might be largely paid for out of income. The Corporation had to choose between the risk of consuming a part of its unrestricted capital, and the certainty of crippling the University in its effort to do the work reasonably expected of it. The risk was taken with the full understanding that consumption of capital could not be allowed to go on for more than one or two years, but with confidence that the large and wealthy body of alumni and friends of the University would continue to provide the means for its reasonable growth and improvement. While about one half of the deficit is due to very unusual expenditures, nearly one half of it is chargeable to outlays in the nature of current expenses. For the year 1881–82 there must be again a large deficit, as the result of engagements already made, but the Corporation have a reasonable expectation of bringing the expenditure within the income during the year 1882–83, partly through an increase of income and partly, if necessary, by cutting off some desirable outlays. There can be no doubt, however, that the present free income of the University is quite insufficient for its suitable maintenance, if it is to continue to do well the work already undertaken.

The unrestricted capital of the University has been further drawn upon for the purchase of the Royal Morse estate on Holmes Place at a cost of $16,873. This purchase was made in order to get a good site for the new building for the Law School.

Sever Hall has been finished during the year and all the bills incurred for its construction and furnishing have been paid. The Sever Hall Fund, with the interest earned on it, has covered the entire cost of the building, including the grading immediately around it, and of some part of the furniture. The number of chairs and tables required for so large a recitation building was very great, and the Corporation deemed it proper to complete the furnishing in a durable manner by taking the sum of $11,000 from the principal of Mrs. Sever's unrestricted legacy. The completion of Sever Hall made it necessary for the College to spend considerable money for the grading of the quadrangle between University Hall and Sever Hall, before laying out the pathways and driveway for that part of the College Yard, and this outlay has largely increased the account of College Yard expenses during the year.

In the Divinity School the income from the new endowments has made a surplus of $2,217.41, in spite of some loss of income from rent of rooms. For 1879–80 there was a surplus of $2,349.93.

In the Law School there is a surplus of $675.77, notwithstanding a considerable loss in tuition fees. For 1879–80 there was a surplus of $1,767.15.

The Medical School has made a surplus of $5,946.69, in spite of a considerable loss in tuition fees and a very large increase in expenditure for salaries. The outlay for repairs has been much less than during the preceding year. For 1879–80 the surplus was $10,377.54.

In the Dental School there is a surplus of $304.43, a large gain in tuition fees having more than covered the increase of expenses. This surplus has been used to reduce the debt of the School. For 1879–80 there was a surplus of $244.63.

In the Lawrence Scientific School there is a surplus of $3,041.35, chiefly due to a very large increase in the number of students, which has also allowed the School to contribute more than heretofore toward its share of the salaries of officers employed jointly by the School and the College. This surplus has been used to reduce the debt of the School. For 1879–80 there was a surplus of $639.17. The payment in full of the Erie Basin Dock bonds, with all the overdue interest, has given the Sturgis Hooper Professor his full salary for the year, besides making up the deficits of his salary and allowance for expenses during the past two years. Mr. Agassiz has during the year personally repaid the sum of $6,559.50, borrowed from the College last year for the Agassiz Building Fund, and made advances to the Fund, amounting to $33,835.50, by a cash payment of $5,835.50 and the sum of $28,000 borrowed from the Agassiz Memorial Fund, for which he gave his own notes duly endorsed. The sum of $6,341.25 from the income of the Agassiz Memorial Fund has been used to repay in part a note given by Mr. Agassiz to the Memorial Fund for advances before Sept. 1, 1879. The whole amount of $33,835.50 has been spent during the year upon the extension of the Museum building under the supervision of Mr. Agassiz, whose continued liberality has provided for many other outlays needed at the Museum.

In the Observatory increased expenses have consumed all the subscriptions for current use received within the year and left a deficit of $1537.22, which has been met out of the subscriptions for current use paid in advance during the year 1878–79. For 1879–80 there was a surplus of $700.95.

In the Bussey Institution an increase of salary payments and a falling off in fees and gifts have left a deficit of $2160.30, which has consumed the surplus of the previous year and made it necessary to take the sum of $1,512 from the unrestricted capital of the Bussey Building Fund. The increase of salary payments was made in the hope that a larger net income from the Bussey Trust might be received within the year. For1879–80 there was a surplus of $648.30.

The improvement in the Bussey Trust mentioned in the last annual report has continued, but a considerable increase in rents received during the year has been wholly consumed by largely increased taxes and the outlays required to fit the stores for new tenants. For the future the outlook is hardly as good as it was a year ago, although it is probable that the net income for 1881–82 will be larger than it has been during the past year.

Gifts have been received during the year as follows:—

TO FORM NEW FUNDS OR INCREASE OLD ONES.

From Edward Russell, Esq., $125, to increase the scholarship founded by him.

From an anonymous friend, $20,000, for retiring allowances to officers of the University.

From Mrs. Samuel Hooper, $30,000, to increase the principal of the Sturgis Hooper Professorship Fund.

From the executor of and trustee under the will of Henry Bartlett, $5000, "to found or establish a scholarship, the income only to be used in aid of meritorious undergraduates who may require such assistance."

From the family of the late Oliver Ames, $17,000, for the further endowment of the Divinity School.

From the executors of John C. Gray, $25,000, as an unrestricted legacy.

From the executors of Rev. Daniel Austin, $2100 additional, on account of bequest of $7000, "to be used for some good College purpose or purposes at the discretion of the College government and their successors."

From the executors of Rev. Daniel Austin, $300 additional, on account of bequest of $1000, for the Divinity School.

From the committee appointed to raise a fund for a memorial at Harvard College to the late Rev. Dr. James Walker, the sum remaining in their hands amounting with interest to $9977.53, for the foundation of the James Walker Fellowship.

From the executor of John B. Barringer, $5000 additional, on account of his bequest for the benefit of the chemical department of the Lawrence Scientific School.

From the executor of Edward M. Barringer notice was received of a bequest for the benefit of the Medical School. $750 on account was received during the year.

Subscriptions for the endowment of a Physical Laboratory: —

Dr. W. S. Bigelow	$500
John L. Bremer	500
James C. Fisk	1000
John L. Gardner	1000
John L. Gardner, Jr.	1000
James J. Higginson	$2000
E. W. Hooper	500
Percival Lowell	500
F. H. Peabody	250
O. W. Peabody	100
	$7350

Subscriptions for the further endowment of the Divinity School, paid to Sept. 1, 1881, as by list following: —

Abbot, Prof. Ezra	$100.
Allen, Rev. Joseph H.	40.
Alley, John B.	100.
Ball, Phinehas	50.
Barrows, Rev. S. J.	33.33
Bellows, Rev. Henry W.	100.
Bixby, Rev. James T.	33.33
Bond, Rev. H. F.	10.
Bowditch, J. Ingersoll	400.
Brown, Rev. H. W.	10.
Caldwell, Rev. J.	15.
Chase, Mrs. Theodore, Sen.	100.
Clarke, Rev. James Freeman	100.
Cobb, Samuel C.	50.
Collyer, Rev. Robert	25.
De Normandie, Rev. James	100.
Dillingham, Rev. Pitt	12.50
Dole, Rev. C. F.	$25.
E. E.	15.
Eliot, Charles W.	100.
Endicott, William, Jr.	500.
Everett, Prof. C. C.	100.
Fay, Mrs. Sarah S.	500.
Felton, S. M.	500.
Fitchburg, First Parish,	35.75
Fish, Rev. William H.	10.
Foote, Rev. Henry W.	100.
Gilman, Rev. N. P.	10.
Gordon, Rev. G. E.	10.
Hall, Rev. Edward H.	30.
Hall, Miss Harriet W.	20.
Hawes, Mrs. Susan F.	25.
Heywood, Rev. John H.	75.
Hoar, E. R.	100.

(Continued.)

Subscriptions for the Divinity School (continued): —

Horn, Samuel	$3.
Lee, Henry	300.
Leonard, Rev. George	25.
Lincoln, D. W.	200.
Lippett, Henry	100.
Lyman, Arthur T.	5000.
Lombard, Rev. Charles P.	5.
Meakin, Rev. Frederick	20.
Milton, First Religious Society, through Rev. Frederick Frothingham	5.
Muzzey, Rev. A. B.	100.
Newell, Rev. William	20.
Osgood, Rev. E. Q. S.	5.
Penhallow, Lucy E.	2.
Pierce, Samuel B.	$100.
Putnam, George	100.
Reed, Milton	50.
Richmond, Miss Caroline	500.
Seward, Rev. J. L.	50.
Silsbee, Rev. William	20.
Stewartt Rev. Samuel B.	25.
Tapley, Amos P.	100.
Tebbetts, Charles B.	50.
Thacher, Rev. R. P. E.	10.
Thayer, Rev. George A.	50.
Toy, Prof. C. H.	100.
Wendte, Rev. C. W.	50.
Wheildon, William W.	50.
	$10,474.91

Subscriptions for the increase of the Botanic Garden Fund, paid to September 1, 1881, from

A friend	$100
A friend	200
Anonymous	10
Agassiz, Alexander	1000
Ames, Frederick L.	5000
Amory, Mrs. W. C.	30
Appleton, T. G.	500
Baker, Ezra H.	100
Beal, James H.	100
Bigelow, Dr. W. S.	500
Blake, Mrs. S. P.	5
Brooks, Mrs. Peter C.	500
Brooks, Mrs. Shepherd	200
Coolidge, J. Randolph	100
Cummings, John	1000
Endicott, William, Jr.	1000
Gardner, George	500
Gardner, John L.	5000
Guild, Miss A. H.	10
Howes, Miss Elizabeth	$250
Loring, Miss K. P.	10
Lowell, Augustus	500
Lowell, George G.	50
Lyman, Arthnr T.	100
Peabody, F. H.	250
Peabody, O. W.	100
Phillips, John C.	2500
Pierce, Henry L.	100
Pratt, Miss Mary	400
Salisbury, Stephen	4000
Sargent, Henry W.	100
Schlesinger, Mrs. S. B.	50
Shaw, Quincy A.	5000
Wales, Miss M. A.	100
Walcott, Dr. H. P.	200
Ware, Dr. and Mrs. Charles E.	500
Wolcott, Mrs. J. H.	100
	$30,165

GIFTS FOR IMMEDIATE USE.

A gift of $5 from Dr. S. S. Silva for the Dental School has been treated as a gift for current use, but will next year be paid over to the proposed Endowment Fund for the Dental School.

Subscriptions for Chinese Instruction, paid to Sept. 1, 1881, from

Martin Brimmer	$333.33	A. A. Low	$500.
D. O. Clark	166.66	E. R. Mudge	333.33
George B. Dixwell	333.	George C. Richardson	333.33
			$1,999.65

Subscriptions for the Observatory, paid to Sept. 1, 1881, from

Adams, Charles Francis	$100	Hunnewell, H. H.	100
Ames, Fred. L.	100	Lodge, Mrs. Anna C.	50
Beal, James H.	50	Lowell, Augustus	50
Bremer, John L.	100	Mudge, E. R.	100
Brimmer, Martin	100	Norcross, Otis	100
Cabot, W. C.	50	Paine, Charles J.	50
Choate, Charles F.	100	Payson, Samuel R.	50
Coolidge, T. Jefferson	100	Pickering, E. C.	200
Curtis, Charles P.	100	Pickman, William D.	100
Dalton, Charles H.	50	Phillips, John C.	100
Davis, James	100	Robbins, R. E.	50
Emerson, G. B.	150	Sears, Mrs. David	100
Fay, R. S.	50	Sears, F. R.	50
Forbes, Mrs. J. M.	200	Shattuck, G. O.	50
Forbes, J. M.	100	Shaw, Mrs. Cora L.	30
Gardner, George	50	Thayer, Nathaniel	100
Gardner, John L.	100	Upham, George P.	50
Grew, Henry S.	50	Weld, W. G.	50
Grover, W. O.	150	Wheelwright, A. C.	50
Hemenway, Mrs. A.	100	Wigglesworth, Misses	100
Higginson, George	100	Winthrop, Robert C.	50
Hooper, Mrs. S.	100		
			$3,680

From George W. Wales, Esq., $200, for books for the Library, in continuance of former gifts for the same purpose.

From an anonymous friend, $500, to increase the salary of the Professor of Entomology.

From William B. Weeden, Esq., $100, to aid in publishing Library Bulletins.

And from Henry Lee, Esq., $50, for the same purpose.

From John Amory Lowell, Esq., $1,000, for immediate use at the Botanic Garden.

From H. H. Hunnewell, Esq., $497.58, for a new boiler for greenhouses of the Botanic Garden.

From the Dante Society, $50, for the purchase of books on Dante.

From Assistant Professor Jacquinot for books for the Library $12.80.

Subscriptions towards the fund for the new building for the Medical School, paid to Sept. 1, 1881, from

A friend	$20	Hunnewell, H. H.	$1,000
Ames, Oliver	500	Jackson, C. C.	500
Appleton, T. G.	1,000	Kidder, H. P.	2,000
Appleton, W. S.	500	King, G. P.	500
Atkins, E.	1,000	Lee, Henry	10,000
Bartlett, F.	1,000	Merriam, C.	500
Beal, James H.	250	Milliken, Henry	200
Bethune, Dr. G. A.	200	Morse, E. R.	100
Bigelow, Dr. W. S.	4,000	Morse, Leopold	250
Billings, R. C.	250	Nickerson, G. A.	5,000
Blake, George B.	250	Nickerson, Miss Josephine	5,000
Brimmer, Martin	500	Payson, G. R.	100
Burnham, T. O. H. P.	3,000	Peabody, F. H.	250
Chase, Mrs. Theodore, Sen.	100	Peabody, O. W.	200
Cobb, Samuel C.	50	Pickman, W. D.	500
Dexter, F. Gordon	5,000	Rice, Alex. H.	100
Endicott, William, Jr.	1,000	Richardson, G. C.	500
Fisk, James C.	500	Saltonstall, Henry	500
Fisk, Mrs. F. L.	100	Schlesinger, S. B.	200
Flagg, Augustus	100	Schlesinger, B.	500
Foster, C. O.	100	Thatcher, Isaac	100
Gardner, John L.	1,000	Thayer, Nathaniel, Jr.	5,000
Grover, W. O.	1,000	Wales, George W.	100
Haven, Trust Estate of H. P.	1,000	Ware, Dr. C. E.	300
Higginson, F. L.	25,000	Wheelwright & Anderson	500
Higginson, George	5,000	Whitney, D. R.	100
Howes, Elizabeth	1,000	Wolcott, J. H.	100
			$87,520

From George Higginson, Esq., Treasurer of the Medical School Building Fund, $86,954, being the balance remaining in his hands of the old subscriptions, with the interest earned thereon.

For Lecturer on Political Economy, through William Gray, Esq., Treas., $150.

The total amount of these gifts for immediate use is $182,719.03, as is also stated in the account on page 16 of this report.

OTHER GIFTS.

From Prof. Josiah P. Cooke, for the College Library, "A collection of most of the original papers published by the officers of the Laboratory during the past ten years, and chiefly during the last five years.

From the executors of Thomas Carlyle, the books used by him in writing on Cromwell and Friedrich.

From the committee appointed to raise a fund for a memorial at Harvard College to the late Rev. Dr. James Walker, a mural tablet, erected in Memorial Hall at a cost of $1,515.67.

EDWARD W. HOOPER,
Treasurer.

BOSTON, Dec. 19, 1881.

General Statement of Receipts and Disbursements for the year ending

INCOME.

Interest on notes, mortgages, and advances, ...		$59,922.73
" " United States 6% Bonds, ...		3,000.00
" " " " 5% "		562.50
" " Massachusetts 5% Bonds, ...		4,254.03
" " Policy Mass. Hospital Life Insurance Co., ...		200.00
" " Erie Basin Dock and Warehouse Co. Bonds, ...		4,025.00
" " New Boston Coal Mining Co. Bond, ...		350.00
" " Railroad Bonds (after deductions for sinking premiums).		
Atchison, Topeka, & St. Fe, 5%, ...	$4,526.24	
" " " " 7%, ...	4,723.17	
Buffalo, Bradford, and Pittsburg, . . .	4,200.00	
Burlington & Mo. River in Iowa, 7%, . .	3,681.44	
" " " in Nebraska, . .	2,996.83	
Chicago, Burlington, and Quincy, . . .	1,940.94	
Eastern, ...	2,762.50	
Ionia and Lansing, 1st Mortg., 8%, . . .	7,577.06	
" " " 2d " 8%, . . .	1,400.00	
Kan. City, St. Joseph & Council Bluffs, 7%,	2,552.78	
Kansas City, Topeka, & Western, 7%, .	34.50	
Michigan Southern & Northern Indiana,	70.00	
Nebraska, ...	4,493.84	
New York Central, ...	1,680.00	
Lincoln & No. Western, 7%, ...	306.25	
Republican Valley, ...	11,776.51	
		54,722.06
" " Municipal Bonds.		
Cincinnati, ...	140.00	
Minneapolis, ...	160.00	
		300.00
Dividends on Stocks.		
Charles River National Bank, ...	480.00	
First (Cambridge) " "	400.00	
Fitchburg " "	192.00	
Massachusetts " "	144.00	
Merchants " "	1,584.00	
New England " "	259.00	
Old Boston " "	400.00	
Schenectady " " (N. Y.),	200.00	
Bank taxes refunded, ...	1,037.73	
		4,696.73
Amoskeag Manufacturing Co., ...	1,200.00	
New Bedford Copper "	15.00	
Massachusetts " "	420.00	
Merrimack " "	1,700.00	
Nashua " "	1,440.00	
Pacific Mills " "	4,000.00	
Stark Mills " "	960.00	
Wamsutta " "	640.00	
		10,375.00
Amount carried forward, ...		$142,408.05

by the Treasurer of Harvard College,
August 31, 1881.

EXPENSES.

Paid to account of Expenses in the

University, as per Table I. (page 32),		$37,374.84
College, " " II. (page 34).		
Salaries for instruction,	$140,003.51	
Repairs,	15,578.65	
Insurance on College Edifices, not valued on Treasurer's books,	518.33	
General Expenses,	37,225.24	
Scholarships,	25,637.79	
Beneficiaries,	2,206.60	
Prizes for Reading, &c.,	1,228.81	
Botanic Garden,	6,044.01	
Herbarium,	335.00	
Gymnasium,	4,542.50	
		233,320.44
Library, as per Table III. (page 39).		
Books,	10,969.64	
Salaries and other expenses,	21,194.52	
		32,164.16
Divinity School, as per Table IV. (page 40).		
Salaries and other expenses,	15,276.61	
Scholarships and Beneficiaries,	975.88	
		16,252.49
Law School, as per Table V. (page 42),		26,522.51
Medical School, as per Table VI. (page 43),		65,101.30
Dental School, as per Table VII. (page 44),		3,709.55
Lawrence Scientific School, as per Table VIII. (page 45).		
Salaries and other expenses,	22,231.49	
Museum of Comparative Zoölogy,	53,825.11	
		76,056.60
Observatory, as per Table IX. (page 46),		17,448.33
Bussey Institution, as per Table X. (page 46),	7,205.61	
Arnold Arboretum, as per Table X. (page 46),	4,983.22	
		12,188.83
Amount carried forward		$520,139.05

General Statement of Receipts and Disbursements for the year ending

INCOME.

Amount brought forward, . .		$142,408.05
Dividends on Stocks (continued).		
Chicago, Burlington, and Quincy R. R.,	2,880.00	
Pittsfield and North Adams Railroad, . .	315.00	
Quincy Railroad Bridge Company, . . .	100.00	
Pittsburg, Ft. Wayne, & Chicago R. R.,	350.00	
		3,645.00
Real Estate, from rents, &c. (gross receipts).		
Cambridge (Houses and Lands), ...	35,965.20	
Boston (general investments), ...	43,238.10	
Bussey stores, ...	27,519.24	
Sundry estates, ...	6,875.79	
		113,598.33
Term Bills.		
College, as per Table II., ...	157,869.63	
Divinity School, as per Table IV., ...	2,334.05	
Law School, as per Table V., ...	22,267.50	
Medical School, as per Table VI., ...	50,323.37	
Dental School, as per Table VII., ...	2,905.83	
Lawrence Scientific School, as per Table VIII., .	6,870.00	
Bussey Institution, as per Table X., ...	580.00	
		243,150.38
Sundries.		
From Wm. Pennoyer Annuity, ...	277.50	
Trustees of Thayer Scholarships, ...	3,600.00	
" Count Rumford's Legacy, . . .	577.94	
" Edward Hopkins, ...	231.02	
Pew rents in Appleton Chapel, ...	195.00	
For use of Library by resident graduates and others,	175.00	
Degrees of A.M., Ph.D., and S.D., ...	270.00	
Degree of Bachelor of Arts out of course, and Examination fees, ...	706.50	
Fees in Infirmary and Laboratory, Dental School, .	788.15	
Printing by College Press for other Departments, .	795.02	
Sales of grass and old material, ...	238.54	
Sales of old examination papers, ...	22.00	
Sale of time signals from Observatory, ...	3,091.67	
Sale of tickets to Commencement Dinner of 1881, .	586.00	
Sale of books, pamphlets, catalogues, &c., ...	328.39	
Use of Sanders Theatre by Societies, ...	278.58	
Use of lockers at Gymnasium, ...	1,135.00	
Returned by Beneficiaries, ...	597.20	
Fees for instruction in Chinese, ...	37.50	
Fee for use of Gymnasium, ...	10.00	
Physical Laboratory, from students, ...	180.00	
		14,121.01
Sundry gifts for immediate use, see page 12, ...		182,719.03
Amount carried forward, . . .		$699,641.80

by the Treasurer of Harvard College,
August 31, 1881.

EXPENSES.

Amount brought forward,			$520,139.05
Real Estate, expenses.			
nsurance.			
Cambridge,	$127.50		
Boston,	747.24		
Bussey stores,	395.25		
		1,269.99	
Taxes.			
Cambridge,	2,449.92		
Boston,	6,216.80		
Bussey stores, &c.,	7,385.27		
		16,051.99	
Interest.			
Cambridge (on advances),	420.00		
Bussey stores (on advances),	2,028.31		
		2,448.31	
Repairs, improvements, care, cleaning and sundries.			
Cambridge,	13,833.92		
Boston,	3,707.86		
Bussey stores,	1,367.43		
		18,909.21	
Heating and hoisting for Bussey stores,	4,649.94		
Less for sales of heat and power,	2,210.00		
		2,439.94	
			41,119.44
Annuities.			
Bussey,		6,800.00	
Gore,		900.00	
Mary Osgood,		360.00	
Lucy Osgood,		780.00	
Class of 1802,		120.00	
Anonymous,		720.00	
Bemis,		2,832.50	
			12,512.50
Sundry payments from income.			
To the Treasurer of the Museum of Fine Arts, from Gray Fund for Engravings,		875.00	
For engravings from accumulated income of Gray Fund for Engravings,		4,393.00	
The income of the Daniel Williams Fund for the benefit of the Herring Pond and Mashpee Indians,		835.10	
The income of the Sarah Winslow Fund, to the Minister and Teacher at Tyngsboro', Mass.,		266.64	
Salary of Chinese Instructor,		2,100.00	
To lecturer on Political Economy,		150.00	
			8,619.74
Amount carried forward,			**$582,390.73**

General Statement of Receipts and Disbursements for the year ending

RECEIPTS EXCLUSIVE OF INCOME.

Amount brought forward,			$699,641.80
GIFTS.			
Edward Russell Scholarship (additional),		125.00	
Daniel Austin Fund for College (part),		2,100.00	
" " " " Divinity School (part),		300.00	
Subscriptions for Divinity School,		10,474.91	
Oliver Ames Fund for Divinity School,		17,000.00	
Retiring Allowance Fund,		20,000.00	
James Walker Fellowship,		9,977.53	
John C. Gray Fund (unrestricted,		25,000.00	
Bartlett Scholarship,		5,000.00	
John B. Barringer Fund (additional),		5,000.00	
Edward M. Barringer Fund (part),		750.00	
Sturgis Hooper Fund (additional),		30,000.00	
Subscriptions for endowment of Botanic Garden,		30,165.00	
" " " " Physical Laboratory,		7,350.00	
			163,242.44
SALES.			
$31,000 Chicago, Burl. & Quincy R. R. 7% Bonds,		39,990.00	
100,000 Atch., Topeka, & St. Fe " 5% "		101,578.75	
50,000 Eastern " "		54,750.00	
70,000 Ion. & Lans. R. R. 2d M. 8% Bonds (paid off),		70,000.00	
1,000 European & No. American R. R. Bond,		747.50	
50,000 United States 6% 1881 Bonds,		50,375.00	
15,000 " " 5% " "		15,525.00	
20,000 Erie Basin Dock and W. Co. Bonds (paid off),		20,000.00	
4,000 Burl. & Mo. Riv. (Neb.) R. R. called bonds, paid off,		4,000.00	
Jarvis Estate, Baltimore,		11,666.66	
			368,632.91
SUNDRIES.			
Notes and Mortgages paid off,	$1,350,916.90		
Less invested in Notes and Mortgages,	1,157,575.65	193,341.25	
Drafts on Baring Brothers & Co.,	12,455.14		
Less paid them on account,	10,627.44	1,827.70	
From Dining Hall Association, to reduce debt,		1,500.00	
Advances to College Wharf repaid,		365.58	
" " accrued interest on bonds repaid,		8,573.37	
" " Agassiz Building Fund repaid,		6,559.50	
New " " " " " from Mr. Agassiz,		33,835.50	
" " premiums on railroad bonds repaid, from $255,000 seven per cent bonds,	$2,550.00		
" 70,000 Ionia & Lansing 2d M. 8%,	1,400.00	3,950.00	249,952.90
Balance, September 1, 1880.			
Cash in Suffolk National Bank,		3,174.94	
Cash in hands of Allen Danforth, Bursar,		1,071.06	
Term Bills due October, 1880,		72,898.36	
" " over due,		2,746.49	79,890.85
			$1,561,360.90

by the Treasurer of Harvard College,
August 31, 1881.

EXPENSES.

Total of expenses brought forward, ... **$582,390.73**

INVESTMENTS AND SUNDRY PAYMENTS.

Burl. & Mo. River (Neb.) R. R. 6% Bds.	$1,000	cost,	$1,042.50	
" " " " (Iowa) " L. G. 7% "	3,000	"	3,570.00	
Atch., Top. & St. Fe R. R. 7% Bds. 1st mort.	156,000	"	189,565.00	
Nebraska R. R. 7% Bonds, ...	14,000	"	16,310.00	
Ionia & Lans. R. R. 8% Bds., 1st mort.	11,000	"	12,642.50	
Kan. City, Top. & W. R. R. 7% Bds. 1st "	64,000	"	81,050.00	
Lincoln & No. Western R. R. 7% Bonds,	35,000	"	41,300.00	
Mass. 5% Bonds, 1894 (Paine Fund), .	4,000	"	4,660.00	
				350,140.00

Paid for accrued interest on above bonds, ...	5,588.26
" " Gray Estate, cor. Washington and Summer Sts., Boston,	475,000.00
" on account of improvements to Andrews Estate, ...	15,562.00
" " " " building Sever Hall and furnishing, ...	13,432.72
" " " " Mr. Agassiz's note from income of Memorial Fd.,	6,341.25
" for Morse Estate, Cambridge, ...	16,873.00
" on account of improvements to Gore Hall, ...	2,414.59

Balance, August 31, 1881.

Cash in Suffolk National Bank, ...	19,063.38	
Cash in hands of Allen Danforth, Bursar, ...	1,131.61	
Term Bills due October, 1881, ...	71,163.80	
" " overdue, ...	2,259.56	
		93,618.35
		$1,561,360.90

The following Account exhibits the State of the Property, as embraced in the Treasurer's Books, August 31, 1881.

Notes and Mortgages.				
Mortgages			$478,479.36	
Long Wharf Co.'s Notes			55,000.00	
Phil., Wil. & Balt. R. R. Notes			50,000.00	
Chic., Burl'n & Quincy R. R. Notes			50,000.00	
Manufacturing Co.'s Notes			105,000.00	
Personal Notes (endorsed)			29,658.75	
				$768,138.11
Massachusetts 5% Bonds,	$91,000	valued at		94,050.00
New Boston Coal Mining Co. Bonds,	10,000	" "		9,000.00
Municipal Bonds.				
Cincinnati,	2,000.00	valued at	2,000.00	
Minneapolis,	2,000.00	" "	2,000.00	
				4,000.00
Railroad Bonds.				
Atch., Top., & St. Fé, 1st M., 7%,	206,000	val'd at	206,000.00	
Buffalo, Bradford, and Pittsburg,	60,000	" "	60,000.00	
Burl'n & Mo. River in Iowa, 7%,	72,000	" "	72,000.00	
" " " in Nebraska, 6%,	247,000	" "	251,412.25	
Ionia & Lansing, 1st Mortg., 8%,	103,000	" "	97,282.50	
Kan. City, St. Jos. & C. B. 1st M., 7%,	50,000	" "	50,000.00	
Kan. City, Top., & Western, 7%,	64,000	" "	64,000.00	
Lincoln & No. Western, 7%,	35,000	" "	35,000.00	
Michigan So. and No. Indiana,	1,000	" "	1,000.00	
Nebraska (guaranteed), 7%,	100,000	" "	100,000.00	
New York Central, 6%,	28,000	" "	27,000.00	
Railroad Bond Premiums,			86,837.73	
				1,050,532.48
Railroad Stock.				
Chicago, Burlington, and Quincy,	360 shares,		24,600.22	
Pittsburgh, Fort Wayne and Chicago,	50 "		5,000.00	
Pittsfield and North Adams,	63 "		6,300.00	
Quincy R. R. Bridge Co.,	10 "		1,250.00	
				37,150.22
Manufacturing Stock.				
Amory,	36 shares,		3,600.00	
Amoskeag,	12 "		10,800.00	
Massachusetts Mills,	7 "		6,600.00	
Merrimack,	17 shares,		17,000.00	
Nashua,	36 "		25,560.00	
New Bedford Copper Co.,	5 "		250.00	
Pacific Mills,	20 "		17,468.29	
Stark Mills,	12 "		11,900.00	
Wamsutta Mills,	80 "		8,880.00	
				102,058.29
Amount carried forward,				$2,064,929.10

Amount brought forward,			$2,064,929.10
Bank Stock.			
Charles River,	60 shares,	6,000.00	
First Cambridge,	50 “	5,000.00	
Fitchburg,	24 “	2,403.00	
Massachusetts,	12 “	3,000.00	
Merchants,	264 “	34,732.00	
New England,	37 “	3,896.00	
Old Boston,	200 “	8,933.00	
Schenectady (N. Y.),	40 “	2,200.00	
			66,164.00
Real Estate.			
Houses and Lands in Cambridge yielding income,		357,163.83	
Unimproved Lands in Cambridge,		75,487.79	
Bussey Real Estate in Boston and Dedham,		413,092.80	
Amory Estate, Franklin Street, Boston,		165,615.81	
Webb Estate, Washington Street, Boston,		164,604.79	
Andrews Estate, Washington Street, Boston,		165,562.00	
Gray Estate, Washington Street, Boston,		475,000.00	
Estate on Hawley Street, Boston,		38,650.78	
Estate on Hawkins Street, “		29,476.09	
Ward's (Bumkin) Island, Boston Harbor,		1,200.00	
Reversion of Buildings on Brattle Street, Boston,		1,000.00	
			1,886,853.89
Sundries.			
In hands of Count Rumford's Trustees in Paris,		10,000.00	
Annuity of William Pennoyer, valued at		4,444.44	
Policy of the Mass. Hospital Life Insurance Co.,		5,000.00	
Due from Dining Hall Association,		37,232.16	
“ “ Lawrence Scientific School,		4,905.14	
“ “ Bussey Trust,		40,566.13	
“ “ Dental School,		15,827.74	
Advances to Scudder's Catalogue,		233.42	
“ “ Chinese Subscription,		374.38	
Balance of account for decorating Appleton Chapel,		2,859.62	
“ “ “ “ repairing College Wharf,		411.88	
Term bills due October, 1881,		71,163.80	
“ “ overdue,		2,259.56	
			195,278.27
Cash in Suffolk National Bank,		19,063.38	
“ “ hands of Allen Danforth, Bursar,		1,131.61	20,194.99
		Total	$4,233,420.25

The foregoing Property represents the following Funds and Balances, and is answerable for the same.

UNIVERSITY FUNDS.

Principal, Sept. 1, 1880.		Principal, Aug. 31, 1881.	
$151,043.08	Stock Account (so called), ...	$99,700.89	
141,638.74	Insurance and Guaranty Fund (so called),	141,638.74	
5,250.00	**Samuel D. Bradford** Fund, ...	5,250.00	
15,750.00	**Israel Munson** Fund, ...	15,750.00	
17,004.97	**Leonard Jarvis** Fund, ...	16,871.63	
1,435.12	**Peter C. Brooks** Fund for building a President's House, ...	1,250.44	
155.78	**Thomas Cotton** Fund, ...	155.35	
56,944.28	**John Parker** Fellowships, ...	57,596.48	
10,585.77	**Harris** Fellowships, ...	10,540.71	
12,407.81	**John Thornton Kirkland** Fellowship,	11,947.88	
	James Walker Fellowship, ...	9,999.83	
27,845.08	**Graduates'** Scholarship, ...	27,810.78	
1,517.22	**Sumner** Prize Fund, ...	1,598.53	
43,987.97	**Winn** Prof. of Ecclesiastical History, .	43,845.73	
20,000.00	**Sever** Fund (unrestricted)	9,000.00	
1,059.00	Gift for Pension System, now called Retiring Allowance Fund, ...	21,785.76	
150.00	**Robert N. Toppan** Prizes	150.00	
	John C. Gray Fund, ...	25,000.00	
			499,892.75

COLLEGE FUNDS.

27,748.64	**Alford** Professorship, ...	27,748.64	
28,337.40	**Boylston** "	28,337.40	
21,619.50	**Eliot** "	21,619.50	
10,000.00	" " (Jon. Phillips's gift),	10,000.00	
3,500.01	**Erving** "	3,500.01	
35,990.99	**Fisher** "	35,990.99	
20,217.08	**Hersey** "	20,217.08	
16,692.65	" " (Thomas Lee's gift),	17,587.89	
3,747.33	**Hollis** " (Mathematics), . .	3,747.33	
30,950.41	**Hollis** " (Divinity), . . .	32,609.33	
43,062.93	**McLean** "	43,062.93	
21,000.00	**Perkins** "	21,000.00	
25,020.19	**Plummer** "	25,020.19	
52,500.00	**Pope** "	52,500.00	
52,996.37	**Rumford** "	52,996.37	
23,139.83	**Smith** "	23,139.83	
16,240.38	Fund for Permanent Tutors, ...	16,240.38	
125,000.00	**Class Subscription** Fund, ...	125,000.00	
12,622.46	**Daniel H. Peirce** "	12,698.04	
1,825.76	**Paul Dudley** Fund for Lectures, . .	1,923.63	
31,500.00	**Jonathan Phillips** Fund (unrestricted)	31,500.00	
$1,109,986.75	. . . . . . Amounts carried forward,	$606,439.04	499,892.75

Principal, Sept. 1, 1880.		Principal, Aug. 31, 1881.	
$1,109,986.75	. . . . **Amounts brought forward,** .	$606,439.04	499,892.75
1,050.00	**John A. Blanchard** Fd. (unrestricted)	1,050.00	
3,070.04	**John W. P. Abbot** “ “	3,234.59	
3,640.04	**Daniel Austin** “ “	5,600.00	
346.25	**Henry Flynt's** Bequest, ...	345.30	
2,568.70	**Abbot** Scholarship, ...	2,556.40	
788.98	**Alford** “	791.27	
	Bartlett “	5,100.50	
5,458.33	**Bassett** “	5,549.99	
11,950.12	**Bigelow** “	11,840.64	
95,270.22	**Bowditch** “	94,399.69	
2,742.20	**Browne** “	2,739.17	
7,105.59	**Class of 1802** Scholarship, ...	7,116.47	
3,154.69	“ **1814** “	3,123.80	
4,964.11	“ **1815** “ **(Kirkland),**	4,980.18	
3,737.88	“ **1817** “	3,738.24	
2,644.26	“ **1835** “	2,635.98	
3,684.15	“ **1841** “	3,706.61	
2,693.93	“ **1852** “ **(Dana)** . .	2,838.33	
5,987.90	**Crowninshield** “	6,308.86	
5,363.47	**W. S. Eliot** “	5,350.93	
2,435.31	**Greene** “	2,445.83	
5,746.15	**Hodges** “	6,054.14	
6,025.73	**Farrar** “	5,998.72	
5,127.58	**Levina Hoar** “	5,202.44	
4,831.61	**Hollis** “	4,840.61	
871.22	**Matthews** “ (balance), .	100.71	
7,829.15	**Morey** “	7,748.78	
6,565.66	**Pennoyer** “	6,576.85	
361.94	**Edward Russell** “	513.04	
3,934.87	**Saltonstall** “ (Mary & Leverett),	3,845.79	
573.27	“ “ (Dorothy), . .	603.98	
5,288.75	**Slade** “	5,322.24	
3,177.38	**Sever** “	3,172.67	
9,388.77	**Sewall** “	9,392.02	
42,714.92	**Shattuck** “	43,099.32	
2,756.34	**Story** “	2,754.06	
4,188.71	**Gorham Thomas** “	4,163.24	
6,452.03	**Toppan** “	6,497.86	
25,278.15	**Townsend** “	25,183.05	
3,880.93	**Walcott** “	3,888.95	
7,775.15	**Whiting** “	8,191.89	
11,634.26	Exhibitions, ...	12,064.95	
1,760.06	Senior Exhibition, ...	1,764.40	
1,200.00	**Samuel Ward** Fund, ...	1,200.00	
955.07	**John Glover** Fund, ...	1,006.26	
2,037.80	**Rebecca A. Perkins** Fund, . . .	2,147.04	
10,897.96	**Quincy Tufts** Fund, ...	10,923.08	
5,141.25	**Day** “	5,256.81	
10,235.49	**Munroe** “	10,226.59	
$1,475,273.12	. . . **Amounts carried forward,** . . .	$979,581.31	499,892.75

Principal, Sept. 1, 1880.		Principal, Aug. 31, 1881.	
$1,475,273.12	. . . Amounts brought forward,	$979,581.31	499,892.75
16,105.78	**Lee** Prizes for Reading, ...	15,899.06	
4,374.08	**Boylston** Prizes for Elocution, . .	4,348.53	
11,525.29	**Bowdoin** Prizes for Dissertations, .	11,693.03	
1,000.10	**Hopkins** Gift for "Deturs," . . .	1.030.91	
22,562.45	Botanic Garden Fund, ...	52,127.57	
15,882.31	Mass. Fund for Botanic Garden, . .	15,882.31	
14,844.17	Herbarium Fund, ...	18,192.57	
125.00	Salary account (unexpended balance),	125.00	
	Physical Laboratory, ...	7,413.46	1,106,293.75
	LIBRARY FUNDS.		
10,706.95	Subscription for Library, ...	10,965.37	
2,084.39	**Bowditch** Fund, ...	2,100.50	
467.61	**Bright** "	1,516.34	
5,444.33	**Denny** "	5,574.63	
5,271.17	**Farrar** "	5,296.52	
3,180.85	**Haven** "	3,343.83	
5,370.08	**Hayward** "	5,563.56	
2,402.80	**Hollis** "	2,414.81	
2,116.78	**Homer** "	2,105.21	
5,463.03	**Lane** "	5,681.55	
62,117.78	**Minot** "	61,044.49	
5,286.80	**Salisbury** "	5,307.31	
20,214.53	**Sever** "	20,239.27	
4,127.84	**Shapleigh** "	4,247.32	
37,708.50	**Sumner** "	38,264.15	
5,010.83	**Tucker** "	5,031.18	
5,474.26	**Ward** "	5,708.75	
222.72	**Wales** "	124.67	
15,956.41	**Walker** "	16,292.28	
62.25	Sundry gifts, etc. (unexpended balances),	94.16	200,915.90
	LAW SCHOOL FUNDS.		
7,386.32	Law School (balance), ...	8,062.09	
15,750,00	**Dane** Professorship, ...	15,750.00	
23,979.82	**Bussey** "	23,979.82	
8,340.81	**Royall** "	8,340.81	56,132.72
	MEDICAL SCHOOL FUNDS.		
53,522.32	Medical School (balance), ...	59,469.01	
19,192.65	**Jackson** Medical Fund, ...	19,192.65	
14,836.70	**Geo. C. Shattuck** Fund, ...	17,129.20	
11,076.33	**Warren** Fund for Anatom'l Museum,	11,497.76	
4,246.52	**Boylston** Fund for Medical Prizes,	3,916.51	
2,049.25	" " " " Books,	2,159.08	
2,367.99	Medical Library Fund, ...	2,489.91	
1,219.55	Medical School Building Fund, . .	161,771.40	
2,000.00	**Quincy Tufts** Medical Fund, . .	2,000.00	
	Edward M. Barringer Fund, . .	765.06	280,390.58
$1,931,383.81	. . . . . Amounts carried forward, ...		$2,143,625.70

Principal, Sept. 1, 1880.		Principal, Aug. 31, 1881.	
$1,931,383.81	. . . . Amounts brought forward,		$2,143,625.70
	DIVINITY SCHOOL FUNDS.		
18,449.35	General Fund, ...	20,666.76	
37,583.74	**Bussey** Professorship, ...	37,583.74	
16,015.81	**Parkman** "	16,015.81	
6,008.43	**Hancock** "	6,008.43	
20,280.38	**Dexter** Lectureship, ...	20,280.38	
9,184.69	**Henry Lienow** Fund, ...	9,184.69	
5,250.00	**Mary P. Townsend** Fund, . . .	5,250.00	
2,100.00	**Winthrop Ward** Fund, ...	2,100.00	
1,050.00	**Samuel Hoar** "	1,050.00	
1,050.00	**Abraham W. Fuller** Fund, . . .	1,050.00	
1,050.00	**Caroline Merriam** " . . .	1,050.00	
12,571.88	**Jackson** Foundation, ...	12,925.74	
2,177.95	**Joshua Clapp** Fund, ...	2,177.95	
1,050.00	**William Pomeroy** Fund, . . .	1,050.00	
525.00	**Hannah C. Andrews** Fund, . .	525.00	
2,989.41	**J. Henry Kendall** Scholarship, . .	3,149.62	
2,688.46	**Nancy Kendall** " . . .	2,832.54	
911.34	**Lewis Gould** Fund	911.34	
1,000.00	**Adams Ayer** "	747.50	
7,875.00	**Joseph Baker** "	7,875.00	
5,366.45	**Thomas Cary** Scholarships, . . .	5,304.07	
2,129.05	**George Chapman** Scholarship, .	2,196.50	
2,888.29	**Joshua Clapp** " . .	2,993.09	
1,505.89	Beneficiary money returned . . .	1,586.61	
40,000.00	**Th. Tileston** of New York Endowm't	40,000.00	
67,438.78	**Henry P. Kidder** Fund, ... **Abby Crocker Richmond** Fund, . New Endowment, ...	10,000.00 1,000.00 66,913.69	
	Oliver Ames Fund, ...	17,000.00	
500.00	**Daniel Austin** Fund, ...	800.00	
10,070.63	**Abner W. Buttrick** Fund, . . .	10,610.44	310,838.90
	LAWRENCE SCIENTIFIC SCHOOL FUNDS.		
38,807.17	Professorship of Engineering, . .	38,807.17	
2,860.50	Professorship of Chemistry, . . .	2,860.50	
61,536,43	**Abbott Lawrence** Fund,. . . .	61,536.43	
50,000.00	**James Lawrence** "	50,375.00	
25,686.85	**John B. Barringer** "	30,686.85	
69,995.00	**Sturgis Hooper** "	100,516.65	
50,000.00	**Gray** Fund for Zoölogical Museum,	50,000.00	
297,933.10	**Agassiz Memorial** Fund, . .	297,933.10	
7,594.01	Teachers' and Pupils' Fund, . .	7,594.01	
117,469.34	Permanent Fund, ...	117,469.34	
7,740.66	**Humboldt** Fund, ...	7,740.66	765,519.71
$2,940,717.40	. . . . . . Amounts carried forward, ...		$3,219,984.31

Principal, Sept. 1, 1880.		Principal, Aug. 31, 1881.	
$2,940,717.40	Amounts brought forward,		$3,219,984.31
	OBSERVATORY FUNDS.		
110,293.88	**Edward B. Phillips** Fund,	110,293.88	
21,000.00	**James Hayward** "	21,000.00	
21,257.19	**David Sears** "	21,826.88	
11,543.26	**Josiah Quincy** "	12,161.96	
2,000.00	**Charlotte Harris** "	2,000.00	
10,000.00	Anonymous Observatory Fund (at present charged with an Annuity),	10,000.00	
8,191.87	Observatory Subscriptions (balance),	6,654.65	
			183,937.37
	OTHER FUNDS FOR SPECIAL PURPOSES.		
413,092.80	**Bussey** Trust (income thereof, ½ to Bussey Institution, ¼ to Law School, and ¼ to Divinity School),	413,092.80	
50,706.25	**Bright** Legacy,	50,540.17	
24,104.51	**Robert Troup Paine** Fund,	24,858.54	
648.30	**Bussey** Institution,		
5,196.15	**Bussey** Building Fund,	3,684.15	
150,844.05	**James Arnold** "	151,248.31	
4,973.45	**Arnold** Arboretum	7,937.76	
42,000.00	**James Savage** "	42,000.00	
19,500.45	**Gray** Fund for Engravings,	15,692.86	
22,915.96	**Gore** Annuity Fund,	20,776.07	
7,281.40	**Mary Osgood** Annuity Fund,	7,311.66	
12,993.51	**Lucy Osgood** Annuity Fund,	12,909.99	
51,168.31	**Bemis** Annuity Fund,	51.015.81	
2,272.60	**Gospel Church** Fund,	2,394.48	
3,171.50	**John Foster** Fund (income to Law School, Divinity School, and Medical School, in turn),	3,171.50	
2,775.55	**Sever** Hall Building Fund,	465.31	
	Baring Bros. & Co. (balance due them),	1,479.43	
			808,578.79
	FUNDS IN TRUST FOR PURPOSES NOT CONNECTED WITH THE COLLEGE.		
16,069.19	**Daniel Williams** Fund for the conversion of the Indians,	16,095.39	
4,838.50	**Sarah Winslow** Fund, for the Minister and Teacher at Tyngsborough, Mass.,	4,824.39	
			20,919.78
$3,959,556.08			$4,233,420.25

Changes in the Funds during the year ending August 31, 1881.

Total amount of Funds, August 31, 1881, as before stated,	**$4,233,420.25**	
Total amount of Funds, September 1, 1880, as before stated,	**3,959,556.08**	
Showing a total increase during the year of		**$273,864.17**
Which is made up as follows : —		
Gifts forming new Funds or increasing old ones,	**163,242.44**	
Increase more than decrease of Funds and balances, which appear both at the beginning and end of the the year,	**176,282.18**	
Increase of Funds established during the year, and balances created during the year,	**1,680.75**	
Increase of specially invested Funds by gain from change of investment,	**900.00**	**342,105.37**
Deduct from this amount for		
Stock Account, this year's deficit charged off, being excess of expenditure over income of College, Library, and University accounts,	34,469.19	
cost of Morse Estate, Cambridge, charged off,	16,873.00	
Decrease of specially invested Funds, by loss from change of investment,	385.84	
Gore Annuity Fund, part of principal spent,	2,414.59	
Sever Hall Fund, " " "	2,310,24	
Sever unrestricted Fund, " "	11,000.00	
Bussey Institution, balance used up,	648.30	
Daniel Austin Fund, income of 1879–80 used by Library in 1880–81,	140.04	68,241.20
		$273,864.17

Net increase of Funds, which appear at the beginning and end of the year, as above,	176,282.18	
Increase of other Funds as above, excluding gifts,	2,580.75	178,862.93
Less deduction as above,		68,241.20
Leaving amount of the net increase of the Funds and balances, excluding gifts, for capital account, as is also shown in the following table,		$110,621.73

Statement showing Changes in the Different

Increase of Funds which appear both at the beginning and the end of the year, being the excess of income (including gifts for immediate use) over payments towards the special objects of those Funds.

John Parker Fellowships,	652.20
Graduates' Scholarship,	465.70
Sumner Prize Fund,	81.31
Retiring Allowance Fund,	726.76
Hersey Professorship (**Thomas Lee's** gift),	894.74
Hollis "	1,658.92
Daniel H. Peirce Fund,	75.58
Paul Dudley Fund for Lectures,	97.87
John W. P. Abbott Fund,	164.55
Alford Scholarship,	2.29
Bassett "	91.66
Class of 1802 Scholarship,	10.88
" **1815** "	16.07
" **1817** "	.36
" **1841** "	22.46
" **1852** "	144.40
Crowninshield "	320.96
Greene "	10.52
Hodges "	307.99
Levina Hoar "	74.86
Hollis "	9.00
Pennoyer "	11.19
Edward Russell "	26.10
Saltonstall " (**Dorothy**),	30.71
Slade "	33.49
wa ll "	3.25
Shattuck "	384.40
Toppan "	45.83
Walcott "	8.02
Whiting "	416.74
Exhibitions,	430.69
Senior Exhibition,	4.34
John Glover Fund,	51.19
Rebecca A. Perkins Fund,	109.24
Quincy Tufts Fund,	25.12
Day Fund,	115.56
Bowdoin Prizes for Dissertations,	167.74
Hopkins Gift for "Deturs,"	30.81
Herbarium Fund,	607.56
Subscription for Library,	258.42
Bowditch Book Fund,	16.11
Bright " "	1,048.73
Denny " "	130.30
Farrar " "	25.35
Amount carried forward,	**$9,809.97**

Funds during the year ending August 31, 1881.

Decrease of **Funds**, which appear both at the beginning and the end of the year, being the excess of payments over income received (including gifts for immediate use) for the special objects of those Funds.

Peter C. Brooks Fund, ...	$184.68	
Thomas Cotton "	.43	
Harris Fellowship, ...	45.06	
John Thornton Kirkland Fellowship, . . .	459.93	
Winn Professorship of Ecclesiastical History, .	142.24	
Henry Flynt's Bequest, ...	.95	
Abbot Scholarship, ...	12.30	
Bigelow "	109.48	
Bowditch "	870.53	
Browne "	8.03	
Class of 1814 Scholarship, ...	30.89	
" **1835** "	8.28	
W. S. Eliot "	12.54	
Farrar "	27.01	
Matthews " (balance), ...	770.51	
Morey "	80.37	
Saltonstall " (**Mary** & **Leverett**),	89.08	
Sever "	4.71	
Story "	2.28	
Gorham Thomas "	25.47	
Townsend "	145.10	
Munroe "	8.90	
Lee Prizes for Reading, ...	206.72	
Boylston Prizes for Elocution, ...	25.55	
Botanic Garden Fund, ...	599.88	
Homer Book "	11.57	
Minot " "	1,073.29	
Wales " "	98.05	
Boylston Fund for Medical Prizes, ...	330.01	
Thomas Cary Scholarships, ...	62.38	
Observatory Subscriptions (balance), ...	1,537.22	
Bright Legacy, ...	166.08	
Bussey Building Fund, ...	1,512.00	
Gray Fund for Engravings, ...	4,332.59	
Lucy Osgood Annuity Fund, ...	83.52	
Bemis Annuity Fund, ...	152.50	
Sarah Winslow "	14.11	
		13,239.24
Stock Acc't, cost of Morse Estate, Cambridge, charged off,	16,873.00	
" " **this year's deficit** " "	34,469.19	
		51,342.19
Adams Ayer Fund, loss from change of investment,	252.50	
Leonard Jarvis " " " " " "	133.34	
		385.84
Amount carried forward, ...		**$64,967.27**

Amount brought forward, . .	$9,809.97	
Haven Book Fund, ...	162.98	
Hayward “ “	193.48	
Hollis “ “	12.01	
Lane “ “	218.52	
Salisbury “ “	20.51	
Sever “ “	24.74	
Shapleigh “ “	119.48	
Sumner “ “	555.65	
Tucker “ “	20.35	
Ward “ “	234.49	
Walker “ “	335.87	
Sundry gifts for Books (unexpended balances),	31.91	
Law School (balance), ...	675.77	
Medical School (balance), ...	5,946.69	
Warren Fund for Anatomical Museum, ...	421.43	
Boylston Fund for Medical Books, ...	109.83	
Medical Library Fund, ...	121.92	
Medical School Building Fund, ...	160,551.85	
Divinity School (general fund), ...	2,217.41	
Jackson Foundation, ...	353.86	
J. H. Kendall Scholarship, ...	160.21	
Nancy “ “	144.08	
George Chapman “	67.45	
Joshua Clapp “	104.80	
Divinity School Beneficiary money returned, .	80.72	
Abner W. Buttrick Fund, ...	539.81	
Sturgis Hooper “	521.65	
David Sears “	569.69	
Josiah Quincy “	618.70	
Robert Troup Paine “	754.03	
James Arnold “	404.26	
Arnold Arboretum “	2,964.31	
Gore Annuity “	274.70	
Mary Osgood Annuity “	30.26	
Gospel Church “	121.83	
Daniel Williams “	26.20	
		189,521.42
Increase of Funds established during the year.		
James Walker Fellowship, ...	22.30	
Physical Laboratory Subscription, ...	63.46	
Bartlett Scholarship, ...	100.50	
Edward M. Barringer Fund, ...	15.06	
		201.32
Baring Bros. & Co. credit balance created, ...		1,479.43
Gray Fund for Engravings, gain from change of investm't,	525.00	
James Lawrence Fund, “ “ “ “ “	375.00	
		900.00
Amount carried forward, ...		$192,102.17

Funds during the year ending August 31, 1881. (*Continued.*)

Amount brought forward,		$64,967.27
Gore Annuity Fund, spent on improving Gore Hall, out of principal,	2,414.59	
Sever Hall Fund, spent on building, out of principal,	2,310.24	
Sever Fund, spent on furniture, etc. for Sever Hall, out of principal,	11,000.00	
Bussey Institution, balance spent,	648.30	
Daniel Austin Fund, income of 1879–80 used by Library in 1880–81,	140.04	
		16,513.17
		81,480.44

Balance, which is the net increase of the Funds for the year ending August 31, 1881, apart from gifts for capital account,	110,621.73
Total,	$192,102.17

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every fund, in case that sum be either less or more than the actual income of the fund. If the object to which the income of a fund is to be applied be a general one, — like salaries, for example,— no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 50.

Table No. I.

THE UNIVERSITY.

RECEIPTS.

Income of the unappropriated fund heretofore called the Stock Account,	$7,756.67	
Income of the following funds : —		
Insurance and Guaranty,	7,591.85	
Israel Munson,	844.20	
Leonard Jarvis,	1,052.76	
Samuel D. Bradford,	281.40	
Peter C. Brooks,	76.92	
Thomas Cotton,	7.88	
Parker Fellowship,	3,052.20	
John Thornton Kirkland Fellowship,	665.07	
Harris Fellowship,	567.41	
James Walker Fellowship,	22.30	
Graduates Scholarship,	1,465.70	
Sumner Prize,	81.31	
Winn Professorship,	2,357.76	
Sever,	580.65	
Retiring Allowance,	726.76	
John C. Gray,	335.00	
		27,465.84
For the degrees of A.M., Ph.D.,and S.D.		270.00
For care of the **Sarah Winslow** Fund,		6.84
Balance remaining after dividing the net income among the Funds,		12.17
For use of Sanders Theatre by societies,		278.58
Sale of grass,		40.00
		$28,073.43

PAYMENTS.

Overseers' Expenses.		
Advertising,	$147.70	
Printing President's Annual Report,	558.12	
Printing Treasurer's " "	119.21	
Printing other reports, &c.,	65.17	890.20
Office Expenses.		
President's	148.83	
Treasurer's	243.42	
Bursar's	670.13	
Corporation Rooms (fuel, rent, &c.),	1,705.50	
		2,767.88
Amount carried forward,		$3,658.08

TABLE I, CONTINUED.

PAYMENTS.

Amount brought forward, ...			$3,658.08
Salaries.			
President, ...		$5,008.31	
Treasurer, ...		4,000.00	
Secretary of the Board of Overseers, ...		100.00	
Bursar, ...		3,000.00	
Bursar's Assistant, ...		1,300.00	
Secretary at Cambridge, ...		600.00	
For keeping Treasurer's books and copying records and other papers, ...		2,800.00	
Superintendent of Buildings, ...		1,500.00	
			18,308.31
For Salary of Lecturer on Ecclesiastical History (from Winn Fund), ...			2,500.00
Fellowships.			
John Parker, ...		2,400.00	
Harris, ...		612.47	
John Thornton Kirkland, ...		1,125.00	
Graduates Scholarship, ...		1,000.00	
			5,137.47
Memorial Hall and Sanders Theatre.			
Repairs, fuel, gas, &c., ...		574.85	
Insurance, ...		420.00	
			994.85
Sundries.			
Advertising, ...		653.23	
Diplomas, ...		22.00	
Labor, &c. on grounds outside of College Yard,		549.14	
Repairs and improvements on the President's house,		261.60	
Subscription to Mercantile Agency, ...		125.00	
Watering streets, ...		213.00	
Watchmen, ...		524.75	
Examinations at New York, Philadelphia, San Francisco, and Chicago, ...		587.35	
Repairing and care of Watchman's clock, . . .		14.30	
Rent of Safes, ...		130.00	
Catalogue (extra pages), ...		93.00	
Legal services, ...		5.00	
Printing, ...		269.48	
Reception of Massachusetts Medical Society, . .		300.00	
Harvard Register, ...		300.00	
Quinquennial Catalogue,			
Balance for editing, ...	$250.00		
Less catalogues sold, ...	236.00	14.00	
Brick and stone walks, ...		2,072.64	
Cutting inscription on Boylston Hall, ...		140.00	
Surveying, ...		38.00	
Furniture, ...		385.80	
Freight, ...		11.84	
Rent of Hall in Boston for lectures on Pedagogy,		66.00	
			6,776.13
			$37,374.84

TABLE No. II.

THE COLLEGE.

RECEIPTS.

From Term Bills.			
Instruction,		$125,157.50	
Rents available for general expenses,		32,237.13	
Diplomas,		475.00	157,869.63
Income of Scholarship Funds.			
Abbot,		$137.70	
Alford,		42.29	
Bartlett,		100.50	
Bassett. From special investment,		275.00	
Bigelow,		640.52	
Bowditch. Interest,	$1,354.47		
From special investment,	3,500.00	4,854.47	
Bright,		1,525.00	
Browne,		146.97	
Class of 1802,		380.88	
" **1814,**		169.11	
" **1815 (Kirkland),**		266.07	
" **1817,**		200.36	
" **1835,**		141.72	
" **1841,**		197.46	
" **1852 (Dana)** (accumulating),		144.40	
Crowninshield (accumulating),		320.96	
Wm. Samuel Eliot,		287.46	
Farrar,		322.99	
Greene,		130.52	
Levina Hoar (Town of Lincoln),		274.86	
Hodges (accumulating),		307.99	
Hollis,		259.00	
Matthews (½ of net rents of Hall),		3,438.82	
Morey,		419.63	
Pennoyer. Interest,	$113.69		
Annuity,	277.50	391.19	
Edward Russell (accumulating),		26.10	
Saltonstall, Mary and Leverett,		210.92	
Saltonstall, Dorothy (accumulating),		30.71	
Savage,		300.00	
Sever,		170.29	
Sewall,		503.25	
Shattuck,		2,289.52	
Slade,		283.49	
Story,		147.72	
Gorham Thomas,		224.53	
Toppan,		345.83	
Townsend,		1,354.90	
Walcott,		208.02	
Whiting (accumulating),		416.74	21,887.89
Received from the Trustees of the **Thayer** Scholarships,			3,600.00
" " " **Thomas Tileston** of New York Endowment,			150.00
Amount carried forward,			$183,507.52

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward, ...			$183,507.52
Other Beneficiary Funds, income of.			
"Exhibitions," Interest, ...	$623.58		
Returned by beneficiaries,	597.20	$1,220.78	
Senior "Exhibition,"		94.34	
Samuel Ward, ...		50.00	
John Glover (accumulating), ...		51.19	
Rebecca A. Perkins "		109.24	
Quincy Tufts, ...		584.13	
Moses Day, ...		275.56	
Munroe, ...		548.60	
			2,933.84
Prize Funds, income of.			
Thomas Lee Prizes for Reading, ...		863.28	
Ward Nicholas Boylston Prizes for Elocution,		234.45	
James Bowdoin Prizes for Dissertations, . . .		617.74	
Edward Hopkins Gift for "Deturs,"		284.62	
			2,000.09
Funds for Instruction.			
Income of the **Alford** Professorship, ...		1,487.35	
Boylston "		1,518.86	
Eliot "		1,158.83	
J. Phillips's addition to Eliot Prof.,		525.00	
Erving Professorship, ...		187.60	
Fisher "		1,929.12	
Hersey "		626.73	
Hollis " (Mathematics), . .		200.84	
McLean "		2,308.18	
Perkins "		1,125.60	
Plummer "		1,341.07	
Pope "		2,814.00	
Rumford "		2,882.53	
Smith "		1,240.30	
Fund for Permanent Tutors, . . .		870.46	
Thos. Lee Fund for the Hersey Prof.		894.74	
Class Subscription, ...		6,700.00	
Henry Flynt, ...		17.58	
Hollis Prof. of Divinity (accumulat'g),		1,658.92	
Paul Dudley Fund for Lectures, "		97.87	
Anonymous gift, to increase salary, ...		500.00	
			30,085.58
Botanic Garden.			
Income of Fund. Interest, ...	$1,075.27		
From special investment,	1,020.00	2,095.27	
" " the Massachusetts Fund, ...		851.28	
Estimated value of use of house by Prof. Gray,		1,000.00	
Gifts for present use, ...		1,497.58	5,444.13
Herbarium. Income of Fund, ...			942.56
Amount carried forward, ...			$224,913.72

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward,		$224,913.72
Income of **Jonathan Phillips's** unrestricted Fund,	$1,668.40	
" " **John A. Blanchard's** " "	56.28	
" " **Daniel H. Pierce** Fund,	755.78	
" " **J. W. P. Abbot's** " (accumulating),	164.55	
" " Fund for Physical Laboratory,	63.46	
		2,728.47
Sundries.		
Pew Rents, Appleton Chapel,	195.00	
For the Degree of Bachelor of Arts out of course, and examination fees,	706.50	
Sales of grass and old material,	122.71	
Sale of old examination papers,	22.00	
For Printing by College Press for other departm'ts,	795.02	
For use of rooms by College officers,	878.50	
Sale of tickets to Commencement Dinner of 1881,	586.00	
For use of lockers at Gymnasium,	1,135.00	
Fee for use of Gymnasium,	10.00	
Physical Laboratory, from students,	180.00	
		4,630.73
Total receipts,		$232,272.92

PAYMENTS.

Paid the incumbents of the following Scholarships.

Abbot,	$150.00
Alford,	40.00
Basset,	183.34
Bigelow,	750.00
Bowditch,	5,725.00
Bright,	1,525.00
Browne,	150.00
Class of 1802,	250.00
" **1814,**	200.00
" **1815 (Kirkland),**	250.00
" **1817,**	200.00
" **1835,**	150.00
" **1841,**	175.00
Wm. Samuel Eliot,	300.00
Farrar,	350.00
Greene,	120.00
Levina Hoar,	200.00
Hollis,	250.00
Matthews,	4,209.33
Morey,	500.00
Pennoyer,	380.00
Saltonstall, Mary and **Leverett,**	300.00
Savage,	300.00
Amount carried forward,	$16,657.67

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward,		$16,657.67	
Sever,		175.00	
Sewall,		500.00	
Shattuck,		1,905.12	
Slade,		250.00	
Story,		150.00	
Thayer,		3,600.00	
Gorham Thomas,		250.00	
Toppan,		300.00	
Townsend,		1,500.00	
Walcott,		200.00	
Thomas Tileston of New York Endowment,		150.00	
			25,637.79
Paid other Beneficiaries.			
Exhibitions,		790.09	
Senior Exhibition		90.00	
Samuel Ward Income,		50.00	
Quincy Tufts " (part of),		559.01	
ay Fund " " "		160.00	
Munroe Fund " " "		557.50	
			2,206.60
Prizes. **Lee** Prizes for Reading,		270.00	
Boylston Prizes for Elocution,		255.00	
Bowdoin Prizes for Dissertations		450.00	
"Deturs" from **Hopkins** Fund		253.81	
			1,228.81
Salaries for instruction,			140,003.51
Repairs and improvements on College Edifices not valued on Treasurer's books,			15,578.65
Insurance on College Edifices, etc. not valued on Treasurer's books,			518.33
Botanic Garden, for labor, repairs, and materials,			6,044.01
Herbarium, " " "			335.00
Gymnasium, Locker money, paid Director,		1,135.00	
Wages,		1,098.61	
Printing,		63.75	
Gas, water, and sundries,		702.20	
Fuel,		610.94	
Apparatus and fittings,		932.00	
			4,542.50
General Expenses.			
Appropriations for collections and laboratories.			
Physical Apparatus (Prof. Lovering),	$600.00		
Mineral and Chemical (Prof. Cooke),	800.00		
Rumford (Prof. Gibbs),	97.07		
Botanical (Prof. Farlow),	100.58		
Physiological (Asst. Prof. James),	19.60		
Geological (Prof. Shaler),	179.66		
Amounts carried forward,	$1,796.91		$196,095.20

TABLE II., CONTINUED.

PAYMENTS.

Amounts brought forward,	$1,796.91		$196,095.20
Zoölogical (Instructors Faxon and Mark),	91.90		
Fine Arts (Prof. Norton),	15.00		
Physical (Prof. Trowbridge),	464.27		
Drawing (Instructor Moore),	128.08		
Greek Department (Prof. Goodwin),	24.30		
		$2,520.46	
Appleton Chapel. Singing, blowing organ, etc.,		564.65	
Advertising,		802.48	
Books and binding,		121.85	
Clerk in Chemical Laboratory,		286.91	
Cleaning and care of College buildings not valued on Treasurer's books,		476.50	
College yard expenses.			
Labor and material,	$4,690.50		
Manure,	211.75		
Tools, etc.,	131.53		
Seed,	154.80		
		$5,188.58	
Commencement Dinner 1881,		927.60	
Dean's and Registrar's Office, clerk, stationery, postage, copying, etc.,		1,838.04	
Diplomas,		206.85	
Fuel,		3,899.19	
Furniture,		806.65	
Freight,		141.49	
Gas,		1,508.81	
Incidentals,		62.31	
Janitors,		7,244.55	
Legal services,		67.85	
Mats,		90.00	
Music, Class-Day,		125.00	
Pews hired in Cambridge churches,		927.00	
Printing office, expenses,		4,884.49	
Services of examiners and proctors,		8,117.36	
" " undergraduates,		532.00	
Watchman,		935.00	
Water rates,		449.62	
			37,225.24
Total payments,			$233,320.44

Table No. III.

THE LIBRARY.

RECEIPTS.

Income of the following Funds for the purchase of books.			
Subscription for Library,		$573.90	
Nathaniel I. Bowditch,		111.70	
Bright, ½ income of the **Bright** Legacy,	$1,358.92		
Interest on balance,	25.08	1,384.00	
Denny,		291.80	
Eliza Farrar,		282.53	
Horace A. Haven,		170.50	
George Hayward,		287.83	
Thomas Hollis,		128.80	
Sidney Homer,		113.47	
Frederick A. Lane,		292.82	
Charles Minot. Interest,	$113.52		
From special investment,	4,200.00	4,313.52	
Stephen Salisbury,		283.38	
Sever,		1,083.52	
Samuel Shapleigh,		221.26	
Charles Sumner,		2,021.20	
Ichabod Tucker. From special investment,		200.00	
Thomas W. Ward,		293.41	
George W. Wales. Gift,	$200.00		
Interest on unexpended balance,	11.95	211.95	
James Walker,		855.24	
Gift from Dante Society,		50.00	
" " Asst. Prof. **Jacquinot,**		12.80	
			13,183.63
James Savage Fund for general expenses (½ of income),		975.60	
Daniel Austin " " " "		412.06	
			1,387.66
William B. Weeden, gift to aid in publ. Lib'y Bulletins,		100.00	
Henry Lee, " " " " " " "		50.00	
			150.00
Fees for use of Library,			175.00
Sales of Bulletins and Calendars,			133.00
Fines,			12.00
			$15,041.29

PAYMENTS.

For Books from	
Subscription Fund,	$315.48
Bowditch "	95.59
Bright "	335.27
Denny "	161.50
Farrar "	257.18
Gray "	3.92
Haven "	7.52
Hayward "	94.35
Amount carried forward,	$1,270.81

TABLE III., CONTINUED.

PAYMENTS.

Amount brought forward, ...	$1,270.81	
Hollis Fund, ...	116.79	
Homer "	125.04	
Lane "	74.30	
Minot "	5,386.81	
Salisbury "	262.87	
Sever "	1,058.78	
Shapleigh "	101.78	
Sumner "	1,465.55	
Tucker "	179.65	
Ward "	58.92	
Wales "	310.00	
Walker "	519.37	
Asst. Prof. **Jacquinot's** gift, ...	12.80	
Subscription of 1880, ...	26.17	
		10,969.64
Salaries and wages, ...	16,380.25	
Binding, ...	1,002.16	
Stationery and postage, ...	504.81	
Fuel, ...	712.01	
Repairs and improvements, ...	817.00	
Freight, ...	134.79	
Cleaning, ...	380.50	
Printing, ...	91.75	
Furniture, ...	53.32	
Insurance on steam boiler, ...	15.00	
Incidentals, ...	23.25	
Water rates, ...	42.84	
Bulletins, ...	1,021.47	
Mats, ...	15.37	
		21,194.52
		$32,164.16

TABLE NO. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of the following Funds applicable to Salaries.

General Fund, ...	$988.87
Benjamin Bussey Professorship, ...	2,014.50
Parkman Professorship, ...	858.46
John Hancock "	322.03
Samuel Dexter, ...	1,087.01
Henry Lienow, ...	492.32
Mary P. Townsend, ...	281.40
Winthrop Ward, ...	112.56
Amount carried forward, ...	$6,157.15

TABLE IV., CONTINUED.

RECEIPTS.

Amount brought forward,	$6,157.15	
Samuel Hoar,	56.28	
Abraham W. Fuller,	56.28	
Caroline Merriam,	56.28	
Joseph Baker,	422.10	
Thomas Tileston of New York Endowment,	1,994.00	
Oliver Ames,	607.45	
New Subscription,	3,955.04	13,304.58
Income of Scholarship Funds.		
Thomas Cary,	287.62	
George Chapman,	114.11	
Joshua Clapp,	154.80	
Jackson Foundation,	673.86	
J. Henry Kendall,	160.21	
Nancy Kendall,	144.08	1,534.68
Income of other Funds.		
Joshua Clapp,	116.74	
William Pomeroy,	56.28	
Hannah C. Andrews,	28.14	
Lewis Gould,	48.83	
Daniel Austin,	38.86	
Abner W. Buttrick,	539.81	
Interest on Beneficiary money returned,	80.72	909.38
Term Bills.		
For Instruction,	1,158.33	
For Rents and Furniture,	1,174.22	
Books sold,	1.50	
		2,334.05
Benjamin Bussey Trust. One-fourth of net income for use of this School,		1,775.76
		$19,858.45

PAYMENTS.

For Salaries for Instruction,	$12,917.00	
Services of students,	200.00	
Labor, repairs, and improvements,	1,083.60	
Cleaning and care of rooms,	394.11	
Books,	263.01	
Printing,	56.75	
Fuel,	113.30	
Gas,	89.54	
Water rates,	30.00	
Diplomas,	2.05	
Collation,	75.00	
Advertising,	2.25	
Expenses collecting and soliciting subscriptions,	50.00	
		15,276.61
Amount carried forward,		$15,276.61

TABLE IV., CONTINUED.

PAYMENTS.

Amount brought forward,		$15,276.61
Paid the incumbents of the following Scholarships.		
Jackson Foundation,	$230.00	
Cary,	350.00	
Chapman,	46.66	
Joshua Clapp,	50.00	766.66
Paid beneficiaries from the following Funds.		
William Pomeroy,	30.00	
John Foster, income for Divinity students every third year,	179.22	
		209.22
		$16,252.49

TABLE NO. V.

LAW SCHOOL.

RECEIPTS.

Income of the following funds.		
Law School Balance,	$395.89	
Nathan Dane,	844.20	
Benjamin Bussey Professorship,	1,285.33	
Isaac Royall,	447.08	
Benjamin Bussey Trust (¼ of net income for use of this School),	1,775.76	
John Foster, income for Law students every third year,	170.02	4,918.28
Term Bills.		
For instruction,		22,267.50
For books sold from Library,		12.50
		$27,198.28

PAYMENTS.

For Salaries for Instruction,	$18,750.00	
Librarian and Assistants,	2,650.00	
Janitor and coat-room boy,	688.79	
Books,	1,792.01	
Binding,	317.90	
Diplomas,	14.93	
Fuel,	499.64	
Gas,	330.22	
Printing	234.32	
Scholarships,	600.00	
Labor, repairs, and improvements,	333.92	
Stationery and postage,	97.75	
Freight,	71.10	
Sundries,	5.93	
Water rates,	70.17	
Furniture,	65.83	
		$26,522.51

Table No. VI.

MEDICAL SCHOOL.

RECEIPTS.

Income of the following Funds.		
Medical School, balance,	$2,868.78	
Jackson Medical,	1,028.74	
Warren, for Anatomical Museum,	593.67	
Ward Nicholas Boylston, for Medical Prizes,	227.64	
Ward Nicholas Boylston, for Medical Books,	109.83	
George C. Shattuck,	918.11	
Hersey Professorship, two-fifths income of the fund,	456.90	
Medical Library Fund,	126.92	
Medical School Building Fund,	687.85	
Quincy Tufts,	107.20	
Edward M. Barringer,	15.06	
		7,140.70
From students for instruction,	47,115.80	
" " for graduation fees,	1,680.00	
" " in Chemical Laboratory, breakage and chemicals,	1,047.88	
" " in Practical Anatomy, for material,	479.69	
		50,323.37
Subscriptions to the Building Fund (1881),	87,520.00	
Cash from Treasurer of Building Fund (1874–75),	86,954.00	
		174,474.00
		$231,938.07

PAYMENTS.

Boylston Medical Prizes. Prizes,	$452.15		
Advertising,	105.50	557.65	
Warren Anatomical Museum.			
Expenses, and additions to collection,		172.24	
Chemical Laboratory, apparatus, chemicals, and wages,		1,490.46	
Physiological Laboratory, expenses and wages,		950.00	
Practical Anatomy and Surgery Expenses,		2,163.47	
Topographical Anatomy Expenses,		89.00	
Embryology Expenses,		20.00	
Microscopy Expenses,		39.26	
Obstetrics "		319.75	
Histology "		14.06	
Materia Medica "		97.01	
Salaries for instruction,		37,020.24	
Repairs and improvements,		733.41	
Scholarships,		800.00	
For account of new building,		14,610.00	
Sets of bones,		200.00	
			59,276.55
Amount carried forward,			$59,276.55

TABLE VI., CONTINUED.

PAYMENTS.

Amount brought forward,		$59,276.55
General Expenses.		
Advertising and catalogues,	$1,016.00	
Alcohol,	67.85	
Books from Library Fund,	5.00	
Cleaning,	212.16	
Clerk,	700.00	
Diplomas,	111.00	
Doorkeeper,	56.00	
Faculty meetings,	80.50	
Fuel,	507.99	
Freight,	17.10	
Gas,	534.40	
Janitor,	1,200.00	
Legal Services,	110.00	
Librarian,	20.00	
Mats,	7.35	
Printing,	173.53	
Rent of rooms (in part) for Pathological specimens,	200.00	
Rent and heating of rooms for Chemical Laboratory,	602.50	
Services of Examiners,	15.00	
Stationery, postage, and sundries,	70.85	
Telephone service,	46.92	
Water rates,	70.60	5,824.75
		$65,101.30

TABLE No. VII.

DENTAL SCHOOL.

RECEIPTS.

From Students,	$2,905.83	
Infirmary,	625.65	
Laboratory,	162.50	
Rent of a part of the School building,	315.00	
Subscription from Dr. S. S. Silva,	5.00	
		$4,013.98

PAYMENTS.

Advertising and catalogues,	$111.30	
Binding,	5.95	
Care of operating room at hospital,	70.00	
Drugs, chemicals, and sundries,	92.11	
Diplomas,	8.96	
Fuel,	119.60	
Gas,	16.90	
Gold foil and metals,	308.95	
Instruments and apparatus,	531.16	
Interest on debt,	967.93	
Printing,	41.50	
Repairs to building,	106.84	
Repairs to Furniture,	160.79	
Salaries of demonstrators,	993.00	
Stationery and postage,	39.10	
Taxes,	118.56	
Water rates,	11.50	$3,709.55

TABLE No. VIII.

LAWRENCE SCIENTIFIC SCHOOL.

RECEIPTS.

Income of the following Funds.			
Professorship of Engineering,		$2,080.06	
Professorship of Chemistry,		153.35	
Abbott Lawrence,		3,298.33	
James Lawrence. Interest,	$900.05		
From special investment,	3,000.00	3,900.05	
John B. Barringer. Interest,	$1,471.05		
From special investment,	200.00	1,671.05	
Gray Fd. for Zoöl. Museum. Interest,	$670.00		
From special investment,	2,893.75	3,563.75	
Sturgis Hooper. Interest,	$3,796.65		
From special investment,	4,025.00	7,821.65	
Agassiz Memorial. Interest,	$14,548.81		
From special investment,	1,100.00	15,648.81	
Teachers and Pupils,		407.04	
Humboldt,		414.92	
Permanent Fund for Museum of Zoölogy,		6,296.34	45,255.35
Advances by Alexander Agassiz, Esq., to the Building Fund,			33,835.50
Term Bills, for Instruction,			6,870.00
			$85,960.85

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.		
Gray,	$3,563.75	
Agassiz Memorial,	9,307.56	
Teachers and Pupils,	407.04	
Humboldt,	414.92	
Permanent,	6,296.34	
Agassiz Building Fund,	33,835.50	53,825.11
Salaries for instruction,	18,548.33	
Expenses in Geology,	800.00	
Stationery and Postage,	17.70	
Proctorial services,	36.00	
Books, Engineering Department,	118.70	
Instruments and apparatus,	358.88	
Printing,	14.04	
Fuel,	280.67	
Gas,	11.70	
Janitor,	480.00	
Labor and repairs,	90.57	
Expenses Chemical Laboratory (part of),	371.05	
Scholarships,	600.00	
Interest on advances,	476.79	
Diplomas,	1.29	
Water rates,	25.77	22,231.49
		$76,056.60

Table No. IX.

OBSERVATORY.

RECEIPTS.

Income of the following Funds,		
Observatory, balance,	$439.09	
Edward B. Phillips,	5,911.76	
James Hayward,	1,125.60	
David Sears,	1,139.38	
Josiah Quincy,	618.70	
James Savage (½ of net income),	975.60	
Charlotte Harris,	107.20	
		10,317.33
Subscriptions, paid,		3,680.00
From sale of time signals,	3,091.67	
" " " Annals,	6.00	
Use of chairs, bill repaid by Am. Assoc. Adv. Science,	4.50	
		3,102.17
		$17,099.50

PAYMENTS.

Salaries and wages,	$12,641.51	
Cleaning and care of Observatory,	190.14	
Gas,	88.80	
Instruments and apparatus, including repairs on same,	1,744.10	
Repairs and improvements on buildings and grounds,	1,572.40	
Stationery and postage,	223.52	
Fuel,	102.57	
Books,	250.08	
Binding,	83.39	
Water rates,	20.00	
Printing,	73.31	
Freight,	149.49	
Trustees for Mrs. Winlock, final payment from sale of time signals,	93.75	
Chemicals and sundries,	27.40	
Furniture,	168.87	
Mats,	19.00	
		$17,448.33

Table No. X.

BUSSEY INSTITUTION.

RECEIPTS.

From **Bussey** Trust (½ net income),	$3,551.52	
From **Bussey** Building Fund (net income),	778.51	
Fees for Instruction,	580.00	
Sale of coal to Arboretum,	75.83	
From **Arnold** Arboretum for rent of greenhouses,	50.00	
Sale of bulletins,	9.45	
		$5,045.31

Table X., continued.

PAYMENTS.

For Salaries,	$6,100.00	
Books,	36.51	
Stationery and postage, cleaning, gas, &c.,	38.48	
Fuel for school building,	60.25	
Wages,	168.00	
Horticultural Department, expenses,	546.45	
Zoölogical Department, expenses,	41.09	
Repairs and improvements,	213.81	
Diplomas,	1.02	
		$7,205.61

Bussey Building Fund.

Receipts.

Income of unexpended balance of Fund,	$278.51	
Estimated value of use of house by Prof. Storer,	500.00	
		$778.51

Payments.

Income carried to Bussey Institution,		$778.51

James Arnold Fund.

Receipts.

Income of Fund,	$8,085.24

Payments.

19/20 of income carried to Arnold Arboretum,	$7,680.98

Arnold Arboretum.

Receipts.

Income of unexpended balance of Fund,	$266.55	
From James Arnold Fund,	7,680.98	
		$7,947.53

Payments.

Salary of Director and Assistant,	$2,900.00	
Expenses of Arboretum,	2,083.22	
		$4,983.22

Table No XI.

MISCELLANEOUS FUNDS.

Bussey Trust.

Receipts.

Net income from Real Estate,		$13,903.04

Payments.

Annuities,	$6,800.00	
One-half of the remaining income to Bussey Institution,	3,551.52	
One-quarter " " " Divinity School,	1,775.76	
" " " " " Law School,	1,775.76	
		$13,903.04

Gray Fund for Engravings.

Receipts.

Income from special investment,	$562.50	
Interest on balance of Fund,	335.91	
From sale of catalogues,	37.00	
		$935.41

Payments.

To the Treasurer of the Museum of Fine Arts,	$875.00	
For Engravings from accumulated income,	4,393.00	
		$5,268.00

Annuity Funds.

Receipts.

Gore, income,	$1,174.70	
Mary Osgood, income,	390.26	
Lucy Osgood, income,	696.48	
Anonymous Observatory, income,	720.00	
Bemis, income,	2,680.00	
		$5,661.44

Payments.

Gore, annuities,	$900.00	
Mary Osgood, annuity,	360.00	
Lucy Osgood, annuities,	780.00	
Anonymous Observatory, annuity,	720.00	
Bemis, annuity,	2,832.50	
		$5,592.50

Daniel Williams Fund.

Receipts.

Interest on Fund,		$861.30

Payments.

Treasurer of Herring Pond Indians,	$227.87	
" " Mashpee Indians,	607.23	
		$835.10

Sarah Winslow Fund.

Receipts.

Interest on Fund,		$259.37

Payments.

Minister at Tyngsborough, Mass.,	$133.32	
Teacher at " "	133.32	
Commission on income credited to University,	6.84	
		$273.48

James Savage Fund.

Receipts.

Interest on Fund,		$2,251.20

Payments.

Scholarship,	$300.00	
One-half the remaining income to Library,	975.60	
" " " " Observatory,	975.60	
		$2,251.20

TABLE XI., CONTINUED.

Bright Legacy.

Receipts.

Interest on Fund, ...		$2,717.84

Payments.

One-half income to **Bright** Book Fund, ...	$1,358.92	
Scholarships, ...	1,525.00	$2,883.92

Sever Hall Building Fund.

Receipts.

From **Sever** Fund, appropriation for furniture, . . .	$11,000.00	
Net Interest on Fund, ...	122.48	$11,122.48

Payments.

On account of Architectural services, contracts for building, and furniture, ...	$2,432.72	
For furniture from **Sever** Fund, ...	11,000.00	
		$13,432.72

Sundry Accounts.

Receipts.

Gain from change of investment for James Lawrence Fd.,	$375.00	
“ “ “ “ “ Gray Fund for Engravings,	525.00	
Chinese Subscriptions paid and fee for instruction, . .	2,037.15	
Advances to Chinese Instruction from “ General Investments,”	62.85	
Baring Bros. & Co. advances in account, ...	1,479.43	$4,479.43

Payments.

Loss from change of investment for Leonard Jarvis Fund,	$133.34	
“ “ “ “ “ “ Adams Ayer “	252.50	
Salary of Chinese Instructor, ...	2,100.00	
Annuity for Class of 1802, ...	120.00	
Advances to Dental School, repaid, ...	304.43	
“ “ Lawrence Scientific School, repaid, . . .	3,041.35	
“ “ **Agassiz** Memorial Fund, “ . . .	6,341.25	
Gore Annuity Fund, spent in improving Gore Hall, .	2,414.59	
Stock Account, cost of Morse Estate, Cambridge, . .	16,873.00	
Sever Fund, transferred, for furnishing Sever Hall, .	11,000.00	
Daniel Austin Fund, transferred, income of 1879–80 to Library, ...	140.04	
		$42,720.50

Gospel Church Fund (accumulating).	Interest on Fund, . . .	$121.83
Robert Troup Paine Fund “	From special investment,	754.03

GENERAL SUMMARY OF THE TABLES.

		Receipts.	Payments
Table I.	University,	28,073.43	37,374.84
Table II.	College,	232,272.92	233,320.44
Table III.	Library,	15,041.29	32,164.16
Table IV.	Divinity School,	19,858.45	16,252.49
Table V.	Law School,	27,198.28	26,522.51
Table VI.	Medical School,	231,938.07	65,101.30
Table VII.	Dental School,	4,013.98	3,709.55
Table VIII.	Lawrence Scientific School,	85,960.85	76,056.60
Table IX.	Observatory,	17,099.50	17,448.33
Table X.	Bussey Institution,	5,045.31	7,205.61
	Bussey Building Fund,	778.51	778.51
	James Arnold Fund,	8,085.24	7,680.98
	Arnold Arboretum,	7,947.53	4,983.22
Table XI.	Bussey Trust,	13,903.04	13,903.04
	Gray Fund for Engravings,	935.41	5,268.00
	Annuity Funds,	5,661.44	5,592.50
	Daniel Williams Fund,	861.30	835.10
	Sarah Winslow Fund,	259.37	273.48
	James Savage Fund,	2,251.20	2,251.20
	Sever Hall Building Fund,	11,122.48	13,432.72
	Bright Legacy,	2,717.84	2,883.92
	Sundry Accounts,	4,479.43	42,720.50
	Gospel Church Fund,	121.83	
	Robert Troup Paine Fund,	754.03	
		726,380.73	615,759.00
		615,759.00	
	Balance	$110,621.73	

Which is the net increase of the Funds and balances,* excluding gifts for capital account, as also shown on page 27.

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* The net increase of the Medical School Building Fund during the year, due to subscriptions, has been $160,551.85, so that the net decrease in the sum of all the other Funds and balances has been $49,930.12.

Certificate of the Joint Committee of the Corporation and Overseers of Harvard College, for examining the Books and Accounts of the Treasurer entered in the Journal kept by him.

We, the undersigned, a joint committee of the Corporation and Overseers of Harvard College to examine the books and accounts of the Treasurer for the year ending August 31, 1881, have examined and audited the Cash book from pages 82 to 121, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were received by him and on hand at the beginning of said year, are now in his possession, or are fully accounted for by entries made therein. We have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

We have carefully examined all notes, bonds, mortgages, and other securities invested during the said year, and are of opinion that all such investments have been judiciously made and are amply secured.

We have in like manner satisfied ourselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

The Committee have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

J. Q. ADAMS, ALEXANDER AGASSIZ,	*Committee on the part of the Corporation.*
LEVERETT SALTONSTALL, CHARLES HENRY PARKER, ISRAEL M. SPELMAN, AMOS A. LAWRENCE,	*Committee on the part of the Board of Overseers.*

Boston, Dec. 19, 1881.

ANNUAL REPORT

OF THE

PRESIDENT AND TREAS

OF

HARVARD COLLEG

1881-82.

CAMBRIDGE:
UNIVERSITY PRESS: JOHN WILSON AND S
1882.

ANNUAL REPORTS

OF THE

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OF

HARVARD COLLEGE.

1881-82.

CAMBRIDGE:
UNIVERSITY PRESS: JOHN WILSON AND SON.
1882.

PRESIDENT'S REPORT FOR 1881-82.

To the Board of Overseers: —

The President of the University has the honor to submit the following Report for the academic year 1881–82; namely, from September 29, 1881, to September 28, 1882: —

By the sudden death of Thomas Buckminster Curtis, A.B., M.D., on the 12th of December, 1881, the University lost a highly valued instructor and the community a learned, skilful, and humane physician, whose large acquirements and resources were always at the service of others.

Mr. Ko kun-hua, Instructor in Chinese, died of pneumonia on the 14th of February, 1882, after a brief sickness, leaving a wife and six young children in a peculiarly helpless and desolate condition. He had been in the employ of the University since September 1, 1879, under a three years' contract made with him in China by the late Francis P. Knight, on behalf of the President and Fellows; so that his term of service had nearly expired, and he was looking forward to a return within a few months to his native land. He was a refined, scholarly, and conscientious man, punctilious in every observance and diligent in every duty, — a heathen gentleman who could have taught many a Christian how to live worthily and suffer patiently. His family were sent back to Shanghai by the University, and a private subscription was raised in Cambridge and Boston sufficient in amount to secure them against want until the children should be grown up and educated.

RESIGNATIONS.

George Minot Garland, Assistant in Clinical Medicine, October 10, 1881.
Sumner Burritt Stiles, Proctor, October 10, 1881.
Henry Gilman Nichols, Proctor, October 10, 1881.
William Amos Bancroft, Proctor, October 10, 1881.
George Riddle, Instructor in Elocution,, October 10, 1881.
Andrew Stillman Waitt, Superintendent of Buildings, January 9, 1882.
John Cheney Thurston, Auditor of the Dining Association, March 27, 1882.
Charles Sedgwick Minot, Instructor in Oral Anatomy and Pathology, April 10, 1882.
Howard Malcolm Ticknor, Instructor in Elocution, May 29, 1882.
John Robinson, Assistant at the Arboretum, May 29, 1882.
Luther Dimmock Shepard, Professor of Operative Dentistry, May 29, 1882.
Henry Jacob Bigelow, Professor of Surgery, May 29, 1882.
Henry Harris Aubrey Beach, Demonstrator of Anatomy, June 26, 1882.
Thomas Waterman, Assistant in Anatomy, June 26, 1882.
Charles Franklin Dunbar, Dean of the College Faculty, June 28, 1882.
Francis Barton Gummere, Instructor in English, September 1, 1882.
Frank William Taussig, Secretary to the President, September 1, 1882.
Henry Nathan Wheeler, Instructor in Mathematics, September 26, 1882.
William Harlow Melville, Proctor, September 26, 1882.
George Francis Arnold, Assistant in the Library, September 26, 1882.
Arthur Percy Cushing, Proctor, September 26, 1882.

Mr. Andrew S. Waitt, Superintendent of Buildings, resigned his charge on account of ill-health, on the completion of his twenty-eighth year of continuous service, a service which was always faithful, zealous, and prudent.

Dr. L. D. Shepard resigned the Professorship of Operative Dentistry because the proper discharge of his duties as professor interfered to an unreasonable degree with his private practice. As Dr. Shepard had given the Dental School fourteen years of almost gratuitous service, eleven as assistant professor and three as professor, and the School had not the means of paying him a suitable salary, the Corporation could not but yield to his wish to retire.

The resignation of Professor Henry J. Bigelow, after a service of thirty-three years as Professor of Surgery, was an event of grave interest for the Medical School and the whole University. A discoverer and inventor of world-wide reputation, a brilliant surgical operator, a clear and forcible lecturer, a keen debater, and a natural leader of men by force of activity, ingenuity, and originality, Dr. Bigelow was from the beginning to the end of his connection with the Medical School a very influential member of the Faculty. His energy and sagacity contributed greatly to the rapid growth of the School between 1858 and 1870. During the discussions of 1870–71 in the Medical Faculty and the governing boards, — discussions which resulted in important changes of the general plan and policy of the School, — his part was that of a strenuous, uncompromising, and indefatigable opponent of the new projects; but the caution and moderation which his opposition induced the majority of the Medical Faculty to practise, doubtless made the measures which they finally recommended to the governing boards all the wiser, and therefore the surer to succeed. Dr. Bigelow continued to labor in the School with unabated interest and vigor for ten years after the adoption of the plans which he had opposed. In recognition of his eminent services to the University and the public, Dr. Bigelow was chosen in May last Emeritus Professor of Surgery, and the degree of Doctor of Laws was conferred upon him at the last Commencement.

On the 28th of June, 1882, Professor Dunbar resigned the laborious office of Dean of the College Faculty, the duties of which he had discharged with great acceptance for six years and a half in addition to his duties as Professor of Political Economy. In his official dealings with the students he was keen-sighted, quiet, patient, kind, and just; in his relations with the instructors he exhibited a prudence and a good judgment which commanded their entire confidence. The Faculty was diligently engaged, during his whole administration, in improving its methods of discipline, instruction, and examination, and developing the elective system of studies, as may clearly be seen in the six admirable reports which he prepared between the years 1876 and 1881. The fundamental principle which guided the labors of the Dean and Faculty is well expressed in the following sentence from the Dean's Report for the year 1879–80: "In the revision of the regulations, as well as in the system of elective study, the Faculty have had constantly in view the purpose of encouraging young men when approaching their majority to act upon their own responsibility, and to learn to make a considerate and profitable use of that full liberty of action which they are so soon to enjoy." The two gentlemen who have successively held the office of Dean since its first establishment in 1870 have set for their successors a high standard of dignity, wisdom, and efficiency.

APPOINTMENTS.

[UNLIMITED, OR FOR TERMS LONGER THAN ONE YEAR.]

Oliver Wendell Holmes, Jr., to be Professor of Law, January 23, 1882.

Ephraim Emerton, to be Winn Professor of Ecclesiastical History, January 23, 1882.

Frederick Irving Knight, to be Assistant Professor of Laryngology for five years from September 1, 1882, February 13, 1882.

William Lambert Richardson, to be Assistant Professor in Obstetrics for five years from September 1, 1882, February 13, 1882.

Charles Burnham Porter, to be Assistant Professor in Surgery for five years from September 1, 1882, February 13, 1882.

John Collins Warren, to be Assistant Professor in Surgery for five years from September 1, 1882, February 13, 1882.

Clement Lawrence Smith, to be Dean of the College Faculty, February 27, 1882.

Henry Jacob Bigelow, to be Emeritus Professor of Surgery, May 29, 1882.

Charles Follen Folsom, to be Assistant Professor of Mental Diseases for five years from September 1, 1882, June 12, 1882.

William Henry Baker, to be Assistant Professor of Gynaecology for five years from September 1, 1882, June 12, 1882.

John Williams White, to be Assistant Professor of Greek for five years from September 1, 1882, June 12, 1882.

David Gordon Lyon, to be Hollis Professor of Divinity, June 26, 1882.

David Williams Cheever, to be Professor of Surgery, June 26, 1882.

William Augustus Rogers, to be Assistant Professor of Astronomy for five years from April 9, 1882, June 26, 1882.

Charles Parker Lyman, to be Professor of Veterinary Science, June 28, 1882.

Edward Stevens Sheldon, to be Instructor in Modern Languages, October 10, 1881.

Sereno Watson, to be Curator of the Herbarium and Instructor in Phytography, November 28, 1881.

Edwin Herbert Hall, to be Instructor in Physics, June 12, 1882.

Benjamin Osgood Peirce, to be Instructor in Mathematics, June 12, 1882.

Charles Edward Faxon, to be Assistant in the Arboretum, from June 1, 1882, May 29, 1882.

Warren Andrew Locke, to be Organist and Choir-master, June 26, 1882.

John Cheney Thurston, to be Auditor of the Harvard Dining Association, October 31, 1881.

Lyman Beecher Fisk, to be Auditor of the Harvard Dining Association from April 1, 1882, March 27, 1882.

[FOR ONE YEAR OR LESS.]

For 1881–82.

Henry Grosvenor Carey, to be Instructor in Vocal Music, October 10, 1881.

Charles Edward Faxon, to be Instructor in Botany, October 10, 1881.

Benjamin Marston Watson, to be Instructor in Horticulture, October 10, 1881.

Edward Burgess, to be Instructor in Entomology, October 10, 1881.

Henry John Dixon Jones, to be Instructor in Elocution, October 10, 1881.

Thomas Sergeant Perry, to be University Lecturer upon English Literature, October 31, 1881.

Grenville Stanley Hall, to be University Lecturer on Pedagogy, December 12, 1881.

Alexander McKenzie, to be Lecturer on Biblical Theology, January 9, 1882.

Francis Amasa Walker, to be University Lecturer on the Resources of the United States, January 9, 1882.

Timothy Otis Loveland, to be Clinical Instructor in the Dental School, October 10, 1881.

Charles Wilson, to be Clinical Instructor in the Dental School, October 10, 1881.

Albert Benton Jewell, to be Clinical Instructor in the Dental School, October 10, 1881.

Edwin Perley Bradbury, to be Clinical Instructor in the Dental School, October 10, 1881.

Eugene Hanes Smith, to be Clinical Instructor in the Dental School, October 10, 1881.

Edward Cornelius Briggs, to be Clinical Instructor in the Dental School, October 10, 1881.

Lester Sackett Ford, to be Demonstrator in Zoölogy, October 10, 1881.

Francis Boott Greenough, to be Clinical Instructor in Syphilis, January 9, 1882.

George Minot Garland, to be Assistant in Clinical Medicine, October 10, 1881.

Edward Hickling Bradford, to be Assistant in Clinical Surgery, October 10, 1881.

Joseph Weatherhead Warren, to be Assistant in Physiology, November 14, 1881.

For 1882–83.

James Laurence Laughlin, to be Instructor in Political Economy, March 13, 1882.

Frank William Taussig, to be Instructor in Political Economy, March 13, 1882.

Louis Dembitz Brandeis, to be Instructor in Evidence, April 10, 1882.

Josiah Royce, to be Instructor in Philosophy, May 29, 1882.

Freeman Snow, to be Instructor in Forensics and History, June 12, 1882.

Francis Barton Gummere, to be Instructor in English, June 12, 1882.

Henry John Dixon Jones, to be Instructor in Elocution, June 12, 1882.

Brooks Adams, to be Lecturer on Constitutional Law, June 21, 1882.

Henry Howland, to be Instructor in Torts, June 26, 1882.

Edward Southworth Hawes, to be Instructor in Greek and Latin, September 26, 1882.

Leonard Parker Kinnicutt, to be Assistant in Chemistry, June 26, 1882.

Charles Frederic Mabery, to be Assistant in Chemistry, June 26, 1882.

Harold Whiting, to be Assistant in Physics, June 26, 1882.

Henry Champion Jones, to be Assistant in Botany, June 26, 1882.

George William Perkins, to be Assistant in Biology, June 26, 1882.

Edward Knight Stevens, to be Assistant in Organic Chemistry, June 26, 1882

John Homans, to be Clinical Instructor in the Diagnosis and Treatment of Ovarian Tumors, June 12, 1882.

Francis Boott Greenough, to be Clinical Instructor in Syphilis, June 12, 1882.

Oliver Fairfield Wadsworth, to be Clinical Instructor in Ophthalmoscopy, June 12, 1882.

Samuel Gilbert Webber, to be Clinical Instructor in Diseases of the Nervous System, June 12, 1882.

Clarence John Blake, to be Clinical Instructor in Otology, June 12, 1882.

John Orne Green, to be Clinical Instructor in Otology, June 12, 1882.

Amos Lawrence Mason, to be Clinical Instructor in Auscultation, June 12, 1882.

James Read Chadwick, to be Clinical Instructor in Diseases of Women, June 12, 1882.

James Jackson Putnam, to be Clinical Instructor in Diseases of the Nervous System, June 12, 1882.

Joseph Pearson Oliver, to be Clinical Instructor in Diseases of Children, June 12, 1882.

Frederick Cheever Shattuck, to be Clinical Instructor in Auscultation, June 12, 1882.

Thomas Morgan Rotch, to be Clinical Instructor in Diseases of Children, June 12, 1882.

Frank Winthrop Draper, to be Lecturer on Forensic Medicine, June 12, 1882.

Charles Sedgwick Minot, to be Lecturer on Embryology, June 12, 1882.

Edward Newton Whittier, to be Instructor in the Theory and Practice of Physic, June 12, 1882.

William Palmer Bolles, to be Instructor in Materia Medica, June 12, 1882.

Francis Augustine Harris, to be Demonstrator of Medico-Legal Examinations, June 12, 1882.

Maurice Howe Richardson, to be Demonstrator of Anatomy, June 12, 1882.

Joseph Weatherhead Warren, to be Instructor in Oral Pathology and Anatomy, June 26, 1882.

Abner Post, to be Clinical Instructor in Syphilis, June 26, 1882.

Timothy Otis Loveland, to be Clinical Instructor in the Dental School, September 26, 1882.

Charles Wilson, to be Clinical Instructor in the Dental School, September 26, 1882.

Albert Benton Jewell, to be Clinical Instructor in the Dental School, September 26, 1882.

Edwin Perley Bradbury, to be Clinical Instructor in the Dental School, September 26, 1882.

Eugene Hanes Smith, to be Clinical Instructor in the Dental School, September 26, 1882.

Edward Cornelius Briggs, to be Clinical Instructor in the Dental School, September 26, 1882.

George Franklin Grant, to be Demonstrator in Mechanical Dentistry, September 26, 1882.

Virgil Clarence Pond, to be Demonstrator in Operative Dentistry, September 26, 1882.

Henry Parker Quincy, to be Assistant in Histology, June 12, 1882.

Edward Hickling Bradford, to be Assistant in Clinical Surgery, June 12, 1882.

William Sturgis Bigelow, to be Assistant in Surgery, June 12, 1882.

Francis Henry Davenport, to be Assistant in Gynaecology, June 12, 1882.
George Minot Garland, to be Assistant in Clinical Medicine, June 12, 1882.
Joseph Weatherhead Warren, to be Assistant in Physiology, June 12, 1882.
William Carroll Emerson, to be Assistant in Chemistry, June 12, 1882.
William Whitworth Gannett, to be Assistant in Pathological Anatomy, June 12, 1882.
Walter Joseph Otis, to be Assistant in Anatomy, June 12, 1882.
Samuel Jason Mixter, to be Assistant in Anatomy, June 12, 1882.

Charles Elliott St. John, to be Proctor in the Divinity School, June 12, 1882.
Arthur Anderson Brooks, to be Librarian in the Divinity School, June 12, 1882.

John Cheney Thurston, to be Auditor of the Dining Association, October 31, 1881.
Frederick Bradford Knapp, to be Superintendent of Buildings for one year from April 24, 1882, April 24, 1882.

At the beginning of the year 1881–82 twelve graduates of other colleges were admitted to the Senior and Junior classes in Harvard College; and at the beginning of the current year thirteen graduates of other institutions were admitted to the Senior, Junior, and Sophomore classes. These twenty-five persons came from nineteen different institutions scattered over the country from Maine to South Carolina, and from Nova Scotia to Iowa. They were admitted without formal examinations upon the conditions which were thought equitable in each case, after careful inquiry into each applicant's previous course of study, and his standing and reputation at the institution from which he came. A standing committee of the Faculty conducts these inquiries, and upon their report the Faculty decides each case by itself. The Faculty is glad to admit to the College good scholars who have graduated, or studied long, at other institutions; but they regard a general rule of admitting *ad eundem* as out of the question, because of the great diversity among the hundreds of institutions which confer the degree of bachelor of arts, and they believe that the method of admission above described is practicable, equitable, and as liberal as a due regard to the standard of the Harvard degree will permit. This practice of entering Harvard College as a candidate for the bachelor's degree after having graduated at another institution may be said to be a recent one, although not unknown before 1881; but there is good reason for it in the variety and range of the instruction here offered, and in many of the cases which have presented themselves since the beginning of the year 1881–82, the student has acted on the advice of officers of the institution with which he was first connected. The practice may therefore prove a growing one, and Harvard College will certainly welcome all such opportunities of co-operating with other institutions.

The College Faculty adopted, after discussions which extended over parts of two years, an important change of policy and practice in regard to the anticipation of studies of the Freshman year by means of examinations passed at the times of the admission examinations. Heretofore, a candidate for admission who passed some of these optional examinations got but little advancement, and gained but little freedom thereby, unless he passed enough of them to be admitted to the Sophomore class. The preparatory schools had small inducement, therefore, to carry their pupils beyond the bare requisitions for admission; unless they could cover the whole work of the Freshman year, and so present candidates for admission to the Sophomore class. The new regulations, in the first place, facilitate the shortening of the College course to three years in individual cases, by providing explicitly that a candidate who has passed a creditable examination for admission to the Freshman class, and moreover passes examinations upon three fifths of the Freshman work, may of right join the Sophomore class, upon condition of making up the remaining two fifths during his three years in College; and by further providing that a candidate who has anticipated less than three fifths, but still a substantial portion of the Freshman work, may ask of the Faculty leave to fulfil the requirements for the degree in three years, specifying in his application the manner in which he proposes to arrange his studies for that purpose. The Faculty will decide upon such applications according to the circumstances of each case. Secondly, the new regulations give greater freedom in his work to a student who, besides passing a creditable examination for admission, has anticipated Freshman studies; for they provide that the work required of him in College as a candidate for the bachelor's degree shall be reduced by the amount of the studies anticipated, provided that the reduction shall not exceed the amount of one full course of study (three or two hours of attendance per week) in any year.

These new regulations are addressed to ambitious students who are quick to learn, and who have something to gain by doing at school the whole, or a good part, of the work of the Freshman year. The possible gains are various. A year may be saved on the course which leads to the degree of bachelor of arts, to be spent in ampler professional study, or in obtaining the degree of master of arts. Robust young men, whose resources are limited, may save the expense of one year at Cambridge by doing extra work at school and in college. On the other hand, the student who has no need to economize, and is quite free to spend four years in college, by anticipating some of the Freshman studies can get more time for the studies of his choice. It is a gain to have accomplished all the prescribed studies in the whole course for the degree of bachelor of arts before entering the College; for then the freedom of study, which is proper to college life as distinguished from school life, begins with the beginning of residence at the College. The Freshman year is in important respects a mere continuation of school life; for its studies are required, and they are the same studies which have been pursued for several years at school, — namely, Latin, Greek, mathematics, and physics, with the addition of the elements of either French or German, and twenty lectures on chemistry. Moreover, in that year the instructor and the willing student are both more hampered by the presence of the unwilling; and the work is seldom found by ambitious students to be as enjoyable and profitable as the work of the subsequent years.

There is good reason to think that capable and ambitious boys could, by the time they were eighteen years and a half old, easily accomplish at good schools the greater part of the work of the Freshman year, in addition to the subjects embraced in the regular examination for admission to the Freshman class. They could then, under the new regulations, obtain the degree of bachelor of arts at the average age of twenty-one and a half, instead of twenty-two and a half, as at present; so that a year would be saved to be devoted to professional training, or to advanced study in preparation for teaching or other learned calling. Under the new rule in regard to the master's degree, which opens courses given in professional schools to candidates for that degree, a young man who proposes ultimately to go into business as a trader or manufacturer will be able to use with great advantage a year saved on the long course which leads to the bachelor's degree, for the study of political science and the elements of law.

It is hardly necessary to point out that these new regulations tend to exalt the function of the secondary schools. Without having received much encouragement from the College, the schools have already begun to present some of their best pupils in more than the two elective groups required for admission. For three years past, from ten to twelve per cent of the candidates for admission have offered more than the two groups required. (See pp. 57, 58.) A few young men are also fitted each year for the Sophomore class; but there is no secondary school in the country which systematically provides instruction in all the subjects which are taught in the Freshman year. Here, then, are comparatively new fields to be cultivated by zealous masters of secondary schools and their most ambitious pupils. The examinations on Freshman studies will hereafter be held in June as well as in September, in order that candidates who are ready in June may not be obliged to carry on their studies through the long vacation.

As the result of several debates and conferences within the past two years, considerable changes have been made in the statements of the requisitions for admission to the following colleges: Harvard, Yale, Brown University, Dartmouth, Williams, Trinity, Amherst, Wesleyan University, Tufts, and Boston University. The object in view was to make the requisitions of these different institutions the same, on paper at least, for all common subjects; and this object has been measurably accomplished, so that the work of a school which is required to prepare boys in the same classes for several of these colleges has been much facilitated. The same quantities of the same authors in Greek, Latin, and English, the same topics in arithmetic, the same amounts of algebra and geometry, and the same descriptions of what is required as to reading Greek and Latin at sight, will be found in the official statements of the requisitions for admission at all the above-mentioned institutions, with some exceptions in the single case of Yale College. At several of the colleges, however, there is an older, and perhaps easier, set of admission requisitions which is maintained as an alternative. Some of these colleges, moreover, require candidates to offer subjects which are not demanded at the others; and no attempt has been made to bring all the colleges even approximately to the same standard in conducting examinations on the same paper requisitions. In spite, however, of all the diversities which remain, the degree of uniformity which has been secured by the negotiations of the past two years is a gain for the secondary schools, and therefore for the colleges as a whole. In conformity with the agreements made on this subject, some slight changes in the requisitions for admission to Harvard College went into effect in 1882. They are described in full in the Dean's Report, p. 56.

The number of special students in the College continues to increase. The Faculty has by gradual steps finally admitted them to all the privileges of undergraduates, except that of winning a degree and consequently gaining admission to the quinquennial catalogue, and has brought them in all respects under the same discipline to which other members of the College are subjected. They may study anything which is taught in the University; they are ranked with other students upon the published rank-lists; and they may win "honors" if they can. (See the Dean's Report, pp. 73, 74.) No scholarships or other beneficiary aids are at present open to them; and this exclusion from beneficiary aid is a loss not only to them but to the College. Many young Americans who possess native force of mind and character grow to manhood under circumstances of poverty or isolation which cut them off from all chance of getting the regular training in Greek, Latin, and mathematics which would have fitted them to pass the College admission examinations at the average age; but they have had irregular opportunities of getting instruction, which they have improved to the utmost; they have read eagerly, and they have intellectual ambition and a keen desire for education. In the wide range of instruction which the University offers, such students find many courses which they are well able to follow, though at first, perhaps, under disadvantages which their zeal and capacity for work soon enable them to overcome; and they are sure to distinguish themselves as scholars if they can find the means of living at the University, under conditions which permit them to put their strength into study. One such student is worth more than scores of youth who have had from childhood up all possible educational advantages, but who have got from them neither power of application, nor a rational ambition, nor any interest in intellectual things. It was observation of the quality of some special students which induced the Faculty gradually to remove the restrictions originally (1876) placed on the admission of this class of students. To see a special student, who upon coming to Cambridge was entirely unable to pass the examinations for admission to the Freshman class, within three years getting the maximum mark in the most advanced courses in Greek and metaphysics which the University provides, is a convincing argument in favor of making hospitable provision for special students in general. The best special students have generally been poor young men, who would always have been excellent candidates for scholarships, and who immediately got such aid whenever, as has repeatedly happened, they were transferred from the class of special students to one of the regular classes of the College. What wise universities most desire is the opportunity of educating young men of uncommon parts; so that restrictions must necessarily be unwelcome which prevent them from applying their beneficiary endowments to the use and furtherance of such young men whencesoever they appear, — whether candidates for degrees or not, whether of regular or irregular previous training, — provided only that they be competent and eager students.

Late in the year the Faculty appointed a committee to consider and report upon the general subject of out-of-door athletic contests, and particularly upon the regulation of match games of ball. It was the elaborateness of the arrangements for match games of base-ball, and the frequency of those contests in April, May, and June which prompted this action on the part of the Faculty; but the inquiry at once took a wide range, and comprehended all the competitive athletic sports. The committee examined the existing methods of maintaining and conducting these sports, and conferred with a number of graduates and undergraduates who were specially interested in them. Before Commencement they reported that a standing committee of the Faculty ought to be appointed to regulate athletic sports, and that the President be requested to ascertain if Yale, Brown, Dartmouth, Princeton, and Amherst (the institutions whose students are represented in the Collegiate Base-ball League) would unite with Harvard in prohibiting games with professional clubs. The Faculty adopted both of these recommendations. A standing committee of three was appointed to regulate athletic sports; and the Faculty thus assumed for the first time a direct responsibility for the character and extent of those exercises. The correspondence of the President with the other colleges above-mentioned was not concluded until October, when it appeared that all the Faculties except that of Yale College would be glad to unite in prohibiting base-ball games with professional clubs.

Since the beginning of the current year, the standing committee of the Faculty have made regulations which forbid College clubs to play or compete with professional clubs, and provide that, after the current year, no student shall belong to a boat crew unless he can swim, and that no student shall engage in any athletic contest until he has been examined and pronounced fit by the Director of the Gymnasium. The committee have also denied to professional "trainers" access to the grounds and buildings of the University, except by special permission of the committee. The influence of the committee has been successfully used to reduce the number of match games of ball, and to confine them to Saturdays. These various restrictive measures have on the whole commended themselves to the judgment of the whole body of students and graduates; for even the young men most active in athletic sports had perceived that the college competitions were running to excess, and that the ball-games, boat-races, and some of the sports technically called athletic, were in danger of losing that amateur quality which should always characterize the bodily exercises and sports of young men who are in training for intellectual pursuits, and for modes of life in which satisfaction and power of usefulness come, not from great muscular strength or special skill in any sport or exercise, but rather from a well-proportioned bodily development and good general health. When games are made a business, they lose a large part of their charm; and college sports cannot approach the professional standard of excellence without claiming the almost exclusive attention of the players, and becoming too severe, monotonous, and exacting to be thoroughly enjoyable. The most devoted college athletes have repeatedly rebelled against what they thought too strict or too prolonged training. Moreover, a high standard of excellence tends to make the number of persons who actually take part in athletic sports very small, the considerable number of tolerably good players being driven from the field, and reduced to the unprofitable position of mere lookers-on.

Many people take it for granted that the students who are conspicuous in athletic sports are capable of nothing better, and stand as a rule at the bottom of the College rank lists. This is by no means the case. Of the eighty-four different students who were members of the University crew, base-ball nine, or foot-ball eleven from 1873 to 1881, more than a quarter stood above the middle of their respective classes, and the average standing of the whole number was represented by seventy-two in a supposed class of one hundred. It may be said, moreover, for some of the very lowest scholars among the athletes, that the perseverance, resolution, and self-denial necessary to success in athletic sports turn out to be qualities valuable in business and other active occupations of after life, even when they are associated with lack of interest in scholarly pursuits or with dulness or slowness of mind. In making this investigation, it was noticed that the base-ball players had on the average a lower rank than the rest (seventy-six in a supposed class of one hundred), the probable explanation being that the base-ball campaign occurs in April, May, and June, absorbing much time at the period of the annual examinations.

In the recent conferences between the committee of the Faculty and the students and graduates interested in athletic sports, and in the general discussion of the subject throughout the University, very little difference of opinion has been exhibited as to what is desirable in the conduct of these sports. It is agreed on all hands that the increased attention given to physical exercise and athletic sports within the past twenty-five years has been, on the whole, of great advantage to the University; that the average physique of the mass of students has been sensibly improved, the discipline of the College been made easier and more effective, the work of many zealous students been done with greater safety, and the ideal student been transformed from a stooping, weak, and sickly youth into one well-formed, robust, and healthy. It is also agreed that athletic competitions, though necessary to the maintenance of a proper interest in the general subject, may easily run into excess, and on that account need to be kept within discreet limits; and that the whole spirit of College sports and contests should be that of amateurs who are amusing themselves, and not that of professional players who are earning a living, and seeking a reputation for its pecuniary value.

The new arrangement for the conduct of morning prayers, which was described in the last Report, worked well throughout the year 1881-82, and has been continued during the current year. The order of the service is as follows: A psalm is read responsively by the minister and the congregation, and is followed by singing by a choir of students; the minister then reads a passage from the Bible, and offers a prayer; the Lord's prayer is then said by the minister and the congregation together; next a hymn is sung, and the service ends with a benediction, the choir singing the Amen. The organ is played while the students are coming in and going out. The service begins at a quarter before nine, and is limited in duration to about twelve minutes, inasmuch as lectures begin at nine o'clock. Many students enter heartily into the service; the choir is composed partly of paid members and partly of volunteers; and the officiating ministers for the year are the ministers who happen to be officially connected with the University, as members of the Corporation, the Board of Overseers, or some Faculty. In 1881–82 these ministers belonged to four different denominations; during the current year they represent but three; for three of them are Orthodox Congregationalists, two are Baptists, and three are Unitarians. The service is impressive, edifying, and interesting, and he who can attend it for years without sometimes being touched by it and moved to better living, must be a very insensible and earth-bound person. Twice within a few years the College Faculty has represented to the Corporation that attendance at prayers ought in their judgment to be made voluntary; but the Corporation has declined to take action upon the subject. In the autumn of 1881 a motion made in the Board of Overseers, that the statutes ought to be altered so that attendance at prayers might be voluntary, was rejected by a large majority.

During the year under review, the Plummer Professorship being vacant, the Sunday morning services in Appleton Chapel were conducted by ministers of different denominations, who were selected by a committee of the Academic Council. In May last the Corporation directed that the Sunday service be held during the year 1882–83 in the evening instead of the morning, and only from the middle of October till the spring recess, the preachers being selected as before by a committee of the Council. These evening services are open to the public as well as to members of the University. The changes made since September, 1881, in the services at morning prayers and on Sundays having rendered the music a more important element than it was before, the Corporation found it expedient to appoint an organist and choir-master; and they were fortunate in securing for this new position Mr. Warren A. Locke, a graduate of the College, a skilful musician, and an experienced teacher.

It has been one result of the recent changes in the conduct of the College chapel, that the church, which was organized in 1814, upon the completion of the chapel in University Hall, as a distinct religious body within the University, has ceased to exist. The Corporation have felt for several years that there were serious objections to making official provision in Appleton Chapel for a religious body which had affiliations with only one sect, and for the accommodation on Sundays of a portion only, and that a diminishing portion, of the University officers.

Last spring the College Faculty and the Academic Council agreed that the distinction which had been maintained since 1877 between graduate and undergraduate courses of instruction should be abolished, and that the courses in the same general subject, like Greek or physics, should be arranged in one series, so that all the instruction offered by the University in each subject should be visible at a glance. As a matter of fact, while the distinction was maintained, the courses in any one department formed a progressive series; graduates were constantly taking courses classed as undergraduate, and many undergraduates were admitted to courses called graduate. (See the Dean's report, pp. 67, 68.) A member of the Junior or Senior class, or a Harvard bachelor of arts or science, or a graduate of some other college who has come to Cambridge to pursue his studies, may be prepared for the higher courses offered in one department of study, but only for the lower in another. That a course of instruction is pursued by undergraduates is no evidence that it is an inappropriate study for a Harvard bachelor who obtained his first degree upon other courses. In short, the taking of the bachelor's degree, which used to mark the completion of a liberal education, now marks only a favorite halting-place where ways intersect and divide.

To encourage graduates of this college and of other colleges to pursue their studies in the arts and sciences at the University, the Corporation and Overseers determined last summer, at the suggestion of the College Faculty, that a few of the scholarships which have heretofore been used for undergraduates might be assigned to graduate students, the award to be made to the most meritorious among those who need pecuniary aid. A cautious experiment on this subject is to be tried during the current year; but a method of opening these scholarships safely and fairly to graduates of other colleges remains to be devised.

The Academic Council gave much attention during the year 1881–82 to a discussion of the conditions on which the degree of master of arts should be conferred. For several years the standing rules of the Corporation and Overseers had provided that the master's degree might be obtained by one year of liberal study after taking the degree of bachelor of arts, or by one year of study in theology, law, or medicine, after taking the degree of bachelor of divinity, or of law, or doctor of medicine, and that the degree of doctor of philosophy should carry with it that of master of arts. All the professional Faculties felt some objection to these rules, because their language implied that professional studies were not liberal, and they made it to appear that the master's degree was superior to the professional degrees; but the Faculties of law and medicine had special reasons for desiring some modification of them. From the time when the three years' course for the degree was instituted at the Law School, the provision for obtaining the master's degree in law by an additional year of study became inoperative, and the School ceased to derive any benefit from it. The Medical School established in 1879–80 an optional fourth year of instruction, but continued to give the degree at the end of three years' study, the Faculty hoping that the best students would remain in the School four years before taking the degree, although they could get it in three. The Harvard bachelor of arts, who had joined the Medical School, could, however, get the degree of doctor of medicine at the end of his third year, and the master's degree at the end of his fourth; and he naturally preferred to get two degrees for four years of study, rather than one only. The Harvard bachelors of arts being generally among the best students in the School, the Faculty saw that their example would be influential with other students against waiting until the end of the fourth year to take the M.D. In other words, the rules about the master's degree were for the Medical Faculty an actual obstruction in the prosecution of their plan of lengthening the course of study for the degree of doctor of medicine. The professional Faculties also urged that the degree of doctor of philosophy was really a professional degree for teachers and men of letters or science; and that there was no reason for making that degree carry with it, or include, the master's degree, which did not apply equally well to all the degrees commonly called professional.

Acting on the advice of the Council, the Corporation and Overseers rescinded the standing rule which provided for giving the degree for an additional year of professional study after graduation in theology, law, or medicine, and amended the remaining rule, so that it should read: — "The Academic Council will recommend for the degree of master of arts candidates otherwise properly qualified, who, after taking the bachelor's degree, shall pursue for at least one year at the University a course of liberal study approved by the Council, and shall pass with high credit an examination on that course. The Council will designate from time to time those courses of instruction in the Professional and Scientific Schools which will be approved by it for the degree of master of arts." This rule proceeds upon the assumption that some, at least, of the studies pursued in the Professional and Scientific Schools are liberal, as distinguished from technical studies; but when the Council undertook in June last to designate those professional courses of instruction which it would accept as liberal, and therefore as suitable for candidates for the master's degree, it found itself upon difficult ground; and at the opening of the current year a question of construction arose in the Council as to the time at which under the new rule a member of any professional school, already a bachelor of arts, might take the master's degree on professional studies, — whether at the end of any year of his three or four years' course in the School, or only at the end of that course. The analogy of the degree of doctor of philosophy was in favor of the view that the professional degree should carry with it the degree of master of arts, and that the two degrees should be simultaneously conferred; but the analogy was far from perfect. The Schools of Law and Medicine had each something to gain by withholding the A.M. until it could go with the LL.B. or M.D.; but some members of these Faculties doubted the justice of this method. A new debate sprang up which has not yet been brought to an issue; but it is already plain that the Council will recommend the governing boards to modify and add to the rule which they made last summer. To put the master's degree upon a thoroughly satisfactory footing, and to make it significant and useful, is well worth a long discussion; for the degree had sunk very low in this country in consequence of the common practice of conferring it, as a matter of course, upon all bachelors of arts who paid a small fee for it three years after taking the bachelor's degree. The efforts made here since the year 1872 to place the degree upon a respectable footing have been successful in one important respect, but have failed in another. The degree has come to be regarded as good evidence that the recipient has made serious attainments in addition to those for which he received the bachelor's degree; but the number of recipients has been altogether too small. That the degree may command respect and be sought for in the future, it ought to be within the reach of, and be held by, a considerable proportion of all the highly educated men in the community. This desirable result cannot be obtained under rules which prevent the best class of professional students from winning the degree.

The following table exhibits in per cents the occupations, or professional destinations, of twelve hundred and twenty-six recent graduates, the survivors of ten classes (1867–1876), as stated in the class reports issued (with one exception) three years after the year of graduation.

	Law.	Medicine.	Theology.	Scientific.	Teaching.	Business.	Unknown & Miscellaneous.
Per cent.	36	10	5	6	9	21	13

The reports are not supposed to be perfectly accurate, and ten years after graduation the distribution of the survivors among the different occupations will not be precisely the same that it is only three years after graduation; but still the figures clearly prove that more than half of the graduates of the College go into law, medicine, theology, and the various scientific callings. It is to be observed, moreover, that the portion of each class which enters the learned and scientific professions undoubtedly embraces a very large proportion of all the men in the class who possess decided intellectual force.

For several years past there have been fire-works, bonfires, and a great deal of noise in the College yard on the night of Commencement, the most active participants in the disturbances being generally young men who had received their degrees in the morning of the same day. There has been nothing malicious or vicious about these disorders, except that a few of the participants have usually been more or less under the influence of intoxicating drink. Very little injury has thus far been done to property, and the accidents to persons have been, with one exception, but trifling. Nevertheless the disturbance is a nuisance to the neighborhood, a source of appreciable danger to property and persons, and a periodical occasion of injurious comment and criticism, and therefore ought to be prevented. The good sense of the great majority of the class just graduated does not prove effectual to control the unthinking turbulence of a small minority, and since the principal actors are bachelors of arts, the ordinary methods of College discipline as administered by the Faculty are inapplicable. Preferring academic methods to any others, the Corporation and Overseers have agreed that they hold themselves at liberty to revoke the degree of any person who participates in these disorders, provided that his degree has just been conferred. It may be expected that this power will be exercised only in very plain cases, and rather by way of suspension than of permanent revocation.

At the instance of the Divinity Faculty, the Corporation and Overseers adopted in June last new rules on the admission of students to the Divinity School. Hereafter only bachelors of arts, or persons who have received an equivalent education, are to be admitted as candidates for the degree of bachelor of divinity, and no person who is not a bachelor of arts is to be admitted as a special student, unless he pass a satisfactory examination in some of the Greek and Latin classics, and in the Greek of the Gospels. The twofold object of these changes is to make the degree of bachelor of divinity inaccessible except to men of thorough training; and to exclude altogether from the School young men who lack the preliminary education necessary to enable them to profit by its teachings, and keep up with its classes. It must be admitted that this regulation in regard to special students is inconsistent with the general tendency in other departments of the University to open instruction to all comers; but the Divinity School requires some special protection, because it peculiarly needs a reasonable degree of homogeneousness in its small classes, and because it is liable to be seriously discredited by the crude public performances of incompetent young preachers, who can say with truth that they are connected with the School, although it has no real responsibility for their quality. The tuition fee of the School is too low (fifty dollars a year) to afford any protection against the entrance of unsuitable persons; but, on the other hand, the total receipts from fees are so small ($1483.35 in 1881–82) that the School has nothing to fear from such a reduction in the number of students as the new regulations are likely to cause.

The Hollis Professorship of Divinity was last filled by the Rev. Henry Ware, who resigned the chair in 1840, after a service of thirty-five years. In 1842 the Corporation separated the little fund of this professorship from the consolidated fund called "Appropriations for Professors," in which it had been long merged, and gave it a separate place in the published accounts with a value of $3998.90. In 1844 they began to accumulate the fund, and until September 1, 1882, made no use of it. In this period of thirty-eight years it doubled three times, so that it now amounts to $34,441.96. When Edward Wigglesworth was chosen in 1721 first Hollis Professor of Divinity, he became the first and the only professor in Harvard College, and the statutes of the professorship assigned to him a vast range of instruction, including positive and controversial divinity, ecclesiastical history, Jewish antiquities, cases of conscience, and critical exposition of both the Old and the New Testament. But when in 1882, after this ancient chair had been vacant forty-two years, the Corporation again determined to fill it, they found that the field originally assigned to the Hollis Professor had in the meantime been divided among five professors of the University, and that in the general progress of knowledge no scholar could be expected to deal thoroughly with more than a small portion of such a field. They therefore elected to the chair Mr. David Gordon Lyon, Ph.D., a student of the Semitic languages and Assyriology, with the general purpose of reinforcing the instruction in Semitic languages, Old Testament criticism, and Jewish history, and so of strengthening the whole department of divinity or theology. After due investigation and deliberation, the Board of Overseers accepted these views, and consented to this election; and Dr. Lyon entered upon his duties at the beginning of the current year.

Thomas Hollis, of London, the founder of the professorship, was a Baptist, and in agreeing with the New England Congregationalists of 1721 upon the statutes of his professorship, he tried to prevent them from insisting on tests of orthodoxy which would have excluded Baptists from his chair. One hundred and sixty-one years after the establishment of the professorship, a member of the Baptist communion is at last elected to it.

The first election of a Winn Professor of Ecclesiastical History, a professorship endowed in 1877, took place in January, 1882, when Ephraim Emerton, Ph.D., was elected to the chair. Dr Emerton has had a thorough training in the study of history both at home and abroad, and as an instructor in history for some years past in the College proper, he has acquired valuable experience in teaching the subject. He is a layman, and brings to the study and teaching of church history the methods used in investigating and expounding the development of other great institutions and bodies of doctrine.

The Rev. Alexander McKenzie, D.D., gave a course of twelve lectures before the School last spring on theology from an evangelical standpoint, and it is the intention of the Faculty to supplement the regular course of instruction in systematic theology by a similar course of additional lectures every year.

There are now six full professors in the Divinity Faculty against three twelve years ago. Within the same period the degree of bachelor of divinity has been instituted, annual examinations in all the studies of the School have been established, the requisitions for admission have been raised, the administration of the beneficiary funds has been placed, as in other departments of the University, upon the basis of scholarship and promise as well as need, and the general spirit of the instruction given has become to a high degree scientific and impartial. In the mean time the bonds of denominationalism have been growing visibly weaker throughout the Protestant world, and it no longer seems impossible that young men should study theology, as they do metaphysics, political economy, or zoölogy, without having committed themselves in advance to any theory, creed, or set of opinions on controverted points. Until that happy day comes, it is hardly to be hoped that the clerical profession can recover from the depressed condition into which it has fallen. The present dearth of able ministers, which is acknowledged in all Protestant denominations, will probably continue so long as young men of independent spirit and mental virility are repelled from the profession at the very threshold, as they now are. A partial remedy for this evil is likely to be found in the conduct of theological education at universities, or other centres of diversified intellectual activity, instead of in isolated denominational seminaries, and with the same academic freedom for teacher and pupil which is allowed in other great departments of study.

There were four important events in the Law School in the year 1881–82. The construction of an elegant and spacious building for the School was begun; a new professorship was endowed with the sum of $90,000 by an anonymous benefactor; to this professorship Mr. Oliver Wendell Holmes, Jr., was chosen; and finally a book fund was raised by subscription to the amount of $47,000, of which $25,230 had been paid on Sept. 1, 1882. The new building will be ready for occupation at the beginning of the next academic year, and will certainly facilitate very much the work of the School, and add greatly to the comfort of its members. These additions to the endowment of the School increase its stability and independence, and indicate, it is to be hoped, that the legal profession and the community are beginning to perceive the importance of endowing professional as well as college education. The accession of Professor Holmes to the Faculty proved to be but a short-lived advantage; for, after an auspicious service of only three months, he accepted the honorable position of a justice of the Supreme Court of Massachusetts.

The tables given in the report of the Dean (pp. 84, 85) indicate that the School has not yet recovered from the restrictive effects of the admission examination imposed in 1877–78, and of the establishment of the three years' course for the degree in the same year. The first table also indicates that the number of students in the School has been affected from year to year, not by the appointment or withdrawal of this or that professor, but by the progressive changes in the regulations of the School concerning admission, residence, and graduation, and to some extent by the changes of legislation, or of rules of court, in various

States of the Union concerning admission to the bar. The School represents a system or method of teaching law, a system which, instead of relying on the passive receptivity of the student, implants in him the spirit of investigation, teaches him how to investigate thoroughly, and cultivates to the utmost his power of independent thinking. It is a system which demands the whole time and strength of an intelligent student for three years; but in return it promises to send him out into his profession with a mental equipment which will enable him, if he possess the right mental and moral fibre, to distinguish himself at once from the mass of untrained youth who annually enter the profession only to encumber its lower ranks. The teachers who administer this system must be men who possess large and systematic knowledge of law, sound judgment, enthusiasm, and the power of clear exposition; but they need not have been eminent at the bar or on the bench. It has but seldom happened that the same man achieved eminence both in practice and as a teacher. In short, the teaching of law is a difficult and honorable profession in itself, and cannot often be combined with, or late in life taken up in exchange for, the practice of law, another absorbing profession which appeals to different motives, develops different qualities, and holds out different rewards. Thus far the Law School has taken its professors, with one exception, from the ranks of the active profession; but in the increasing difficulty of obtaining and retaining suitable professors of that sort it is a satisfaction to remember that there is another approved method of procuring law professors, — the method which the great law schools of continental Europe have long followed, and which has produced not only great teachers but great jurists. Those schools have selected young men of mark, who have shown a genius for law and a desire for the life of a teacher and student, and, having carefully tested on probationary appointments their capacity for teaching, made them professors at an age so early that the whole vigor of their youth and prime could be thrown into teaching and authorship. The Law School has tried this method once with conspicuous success, and it may be obliged to try the method again — without, however, adopting it as a policy.

On the 26th of September, 1881, a letter was received by the President and Fellows from Marie E. Zakrzewska M.D., and nine other female physicians (see Appendix I.), asking if the President and Fellows would accept the sum of $50,000 for the purpose of providing such medical education for women as would entitle them to the degree of doctor of medicine, the sum with its accumulations to be applied to this purpose within ten years, or returned to the donors. At the meeting of the Corporation on the 31st of October, the following action was taken, in view of the considerable change in the membership of the Board of Overseers since May, 1879, when the subject of the admission of women to the Medical School was last discussed in that Board: "Whereas the President and Fellows have been asked if they would accept a fund, the income of which shall be ultimately used for the medical education of women: Voted, to consult the Board of Overseers anew upon the expediency of the University's undertaking that function." This vote was received by the Overseers at a meeting held November 17, 1881, and was referred to a committee of five members, which at the stated meeting of January 11, 1882, presented a majority and a minority report. The majority report, signed by three members, recommended the Overseers not to advise the acceptance of such a fund; the minority report, signed by two members, recommended the Overseers to advise its acceptance. The Board adopted the minority report, and voted, — "To recommend the acceptance by the President and Fellows of a fund, the income of which shall be ultimately used for the medical education of women." (Ayes

11, noes 6). This vote of the Overseers was received by the Corporation at their meeting on January 23; but no action was taken upon the subject, because of private information that members of the minority in the Board of Overseers desired to have opportunity of bringing the matter again before the Board, and had hopes of reversing in a larger meeting the recommendation made on January 11. At a special meeting of the Overseers on the 2d of February, a member of the minority of January 11 moved "that the Corporation be respectfully requested, before taking any action under the vote of this Board, 'to recommend the acceptance by the President and Fellows of a fund, the income of which shall be ultimately used for the medical education of women,' to consult this Board in relation to such action." This motion was laid upon the table. At a special meeting of the Overseers on the 4th of March (the next meeting but one) the above motion having been taken from the table, the member who originally made it obtained the consent of the Board to modify it so that it should read, "That the President and Fellows be requested not to appropriate any money received for the purpose of giving a medical education to women without taking the advice of this Board," and then procured the postponement of the consideration of this modified motion until an adjourned meeting to be held on the 18th. In the evening of the same day (March 4) the Medical Faculty voted that a committee be appointed "to consider and report at an adjourned meeting of the Faculty in one week upon the subject of the medical education of women and its relation to this Faculty." This Committee unanimously recommended, at the adjourned meeting on March 11, that the Faculty pass the following preamble and vote: —

"Whereas the Medical Faculty of Harvard University has learned that the President and Fellows and the Board of Overseers of that Institution are considering the expediency of receiving money for the medical education of women, and of granting a medical degree to women: Voted, that this Faculty protests against any action on the part of the Corporation which shall tend to provide for the medical education of women under the auspices of the University, without the advice and full concurrence of the Faculty of the Harvard Medical School."

The preamble and vote were adopted by the Faculty (ayes 14, noes 5, absent 2), and forwarded to the Corporation and Board of Overseers. The Corporation received this communication at their stated meeting of March 13, and laid it upon the table. The Overseers received it at their meeting previously appointed for the 18th. On that day the motion which was laid on the table at the meeting of March 4 was taken up, again modified by its mover with the consent of the Board, so that it was made to read, "That in the opinion of this Board it is not advisable for the University now to give any assurance, or hold out any encouragement, that it will undertake the medical education of women by Harvard College in its Medical School," and referred to a committee of three with instructions to confer with the Medical Faculty on the subject of their protest just received. At the same meeting it was also voted, "That the Corporation be requested to take no action on the letter of Dr. Zakrzewska and others, inquiring whether the College will accept the sum of $50,000 for the medical education of women upon certain conditions, before receiving a further communication from this Board."

The last vote was received by the Corporation at their stated meeting of March 27. On the 25th of March a special meeting of the Medical Faculty was held to consider, and act upon, a communication from the chairman of a committee of the Overseers proposing a conference with the Faculty. The meeting consisted of seventeen members, five members, including the President and Dean, being absent. The following preamble and votes were adopted:—

"Whereas the Medical Faculty believe that the President and Fellows, and the Board of Overseers are now cognizant of their desire for an opportunity to be heard before these bodies in matters relating to medical education in the University: therefore

"Voted, that the Medical Faculty hereby withdraws its protest to the President and Fellows, dated March 11, 1882, and communicated to the President and Fellows and to the Board of Overseers. (Unanimously.)

"Voted, that this Faculty hereby respectfully represents to the President and Fellows its conviction that the interests of medical education would be advanced, and the harmonious action of the University better secured than now, if the Faculty were officially assured by the President and Fellows that they deem it inexpedient to legislate in matters relating to medical education in the University without first offering to the Medical Faculty an opportunity of expressing its views. (Unanimously.)

"Voted, that if the President and Fellows have a desire to be informed of the present views of the Medical Faculty upon the question of female medical education in the University, the latter would respectfully state that in their opinion it is not advisable that the President and Fellows should open a course of medical study to women under the auspices of the University." (Ayes 16, noes 1. Two members who voted in the affirmative desired to have it recorded that they did so on the ground that the cordial co-operation of the majority of the Faculty was necessary to success, and could not be secured.)

The meeting also appointed a committee to confer with the committee of the Overseers. The two committees having subsequently had a conference, another special meeting of the Faculty was held on the 8th of April to consider what answer should be given to a request from the committee of the Overseers for the reasons which led the Faculty to think it inadvisable that the University should provide a course of medical study for women. The Faculty adopted a reply (see Appendix II.), the substance of which is contained in the following votes: "Voted, that the fact that the Medical Faculty is strongly adverse to undertaking female medical education would be, in their belief, of itself fatal to the success of an attempt in that direction." "Voted, that female medical education cannot be undertaken in the Medical School without a serious risk of detriment to the interests of the medical education now given to men."

At the stated meeting of the Corporation on April 10, the preamble and votes passed March 25 by the Medical Faculty were received, and in response to the representation contained in the second vote, the Corporation recorded the following resolution: "Voted, that the President and Fellows deem it inexpedient to legislate in matters relating to medical education in the University without first offering to the Medical Faculty an opportunity of expressing its views." A standing committee of two members of the Board was also appointed, with which the Medical Faculty might confer on any matters relating to medical education in the University. At the stated meeting of the Board of Overseers on April 12, a communication from the Medical Faculty, enclosing a copy of the above preamble and votes which the Faculty had adopted on the 25th of March, was received and laid upon the table. The committee appointed to confer with the Medical Faculty, to which was also referred the motion made at the meeting of March 18, on the subject of undertaking the medical education of women, reported that they did not "deem it necessary to make any recommendation either for or against this motion," and simply returned it to the Overseers for their action. The motion having been amended by striking out the word "now," it was adopted as follows: —

"Voted, that in the opinion of this Board it is not advisable for the University to give any assurance, or hold out any encouragement, that it will undertake the medical education of women by Harvard College in its Medical School." (Ayes: the Treasurer of the University, and Messrs. Endicott, Paine, Saltonstall, Salisbury, Amory, Russell, Smith, Hodges, Parker, R. M. Morse, Lyman, and Lawrence, — 13. Noes: the President of the University, and Messrs. Brooks, Storey, Peabody, McKenzie, J. T. Morse, Clarke, Seaver, Sargent, Wyman, Kidder, Hale, — 12. Absent: Messrs. Cabot, Holmes, Fiske, Lowell, Lee, Hoar. In the chair, Mr. Codman.) At an adjourned meeting of the Board on April 27, the further consideration of the communication from the Medical Faculty, which was laid upon the table on April 12, was indefinitely postponed. The vote passed by the Board of Overseers on April 12, having been communicated to the Corporation on the 24th, the Corporation immediately took the following action: "Upon the question of accepting the proposal contained in the communication received by this Board on September 26, 1881, from Marie E. Zakrzewska, M.D., and others, in relation to the medical education of women in Harvard University, Voted, that while the President and Fellows of Harvard College recognize the importance of thorough medical education for women, they do not find themselves able to accept the proposal contained in the communication above referred to."

Throughout this discussion the supporters of the policy of providing at the University for the education of women in medicine were placed at serious disadvantage, because the sum of money mentioned was, in the first place, inadequate, and secondly, not ready in hand, but only to be raised in case the President and Fellows consented to receive it. It is proper to add that one reason, not of a permanent character, had some influence in determining the attitude of the Medical Faculty during both the discussions of this difficult subject which have recently taken place, — the first in 1879, and the last in 1882. The Faculty felt that it had on its hands new undertakings enough, which were of uncertain issue as regards the future income of the School, and were sure to be costly during the years of experiment and transition. Thus, in 1879, the fact that they were engaged in radically changing the plan of study in the School was urged by them as a reason for not entering upon the experiment of admitting female students. Again, in April, 1882, the effort which the Faculty has been making since the beginning of the year 1880–81 to establish a fourth year of study in the School was still in its first difficult stages, and the Faculty was beginning to see that the occupation of the new building, which then gave promise of completion within a few months, was sure to occasion many new expenditures, as well as to give the School many new facilities.

The last table in the Dean's report (p. 93) brings out the fact that ninety-one per cent of the graduates of 1882 had been in the School six terms, or three years; and that only one graduate had been in the School less than two years. On going back ten years, these figures are found to be almost reversed. Of fifty-six graduates in 1872, only three had been three years in the School, and only eight more had been two years in attendance; while eighty per cent had been connected with the School only three terms or less. These figures demonstrate that ten years have wrought a great change for the better in the constitution and discipline of the School, and in the quality of the education to which its diploma testifies.

It is the endeavor of the Faculty to make the optional fourth year of study so interesting and profitable that the better class of students will feel that they cannot afford to forego it; but since no class, which has had adequate notice of the establishment of the fourth year's course, can enter upon that course until September, 1883, it is still impossible to foresee how soon this additional effort to improve medical education will succeed. The Dean has twice pointed out in his annual reports that the Trustees of the Hospitals might greatly promote the prompt success of this much-needed improvement by indicating a preference, in selecting house-officers or assistants, for young men who have given four years to medical study over those whose systematic instruction has terminated in three.

Since September 1, 1878, the Dental School has reduced its debt by $2076.47, maintained its standard for the degree, and gained somewhat in the number of its students. It is still burdened with a debt of $14,488.37, and for four years past it has paid no salaries to its professors. It has never paid its clinical instructors anything, and in its best years it only paid the professors a few hundred dollars. The subscription for the benefit of the School which was started in the summer of 1881, produced $515 up to September 1, 1882, all but one of the subscribers being dentists, and thirteen being subscribers of $20 a year for five years. The School has given every evidence that it deserves to be placed upon a better pecuniary footing. Its standard for graduation is high, its course of study longer and more thorough than that of any other American Dental School, and its facilities excellent for giving its students practice in operating; its graduates are attached to it, have faith in it, and are ready to give both time and money, according to their means, for its maintenance. Moreover a considerable proportion of the graduates of the School during the past thirteen years (the first class graduated in 1869) have already become successful practitioners, and influential members of the profession. Among the Boston dentists of largest income are already included several of the graduates of this young School. Indeed, the School is chiefly recruited from year to year by the zeal of its graduates, and the stimulating example of their success. They have themselves started a subscription for the endowment of the School, and have every right to urge it upon the attention of liberal persons who recognize the fact that skilful dentistry has been of great service to them or to their children, and who perceive that the dental profession is, and must continue to be, an indispensable agency, for preventing pain, maintaining the power to enjoy food, preserving beauty and strength, and putting off old age. An endowment of at least $30,000 is needed.

The Scientific School, the Botanic Garden, and the Bussey Institution, including the Arnold Arboretum, call for but brief remarks. The Dean of the Lawrence Scientific School directs attention (p. 95) to the explanation of the diminution in the number of special students in 1881–82, namely the freer opening of the College to special students. This cause is likely to continue to produce this effect. The Director of the Botanic Garden was in Europe during the year, and took occasion to study there the methods employed in gardens belonging to Universities. By the generosity of two members of the Overseers' Committee on the Garden, he was enabled to buy a considerable collection of apparatus and instruments for botanical research. During the year $2000 were added to the Garden Fund; but this fund is still inadequate, and persons who desire to promote the study of botany, pure or applied, or to strengthen the public taste for the various forms of floriculture and arboriculture, have here the best possible opportunity to give money in furtherance of these objects.

The net income of the Bussey Trust Fund was larger by $2267.08 than it was in 1880–81, and a further improvement of moderate amount may be looked for, as soon as certain heavy expenditures for repairs upon the stores have been completed. The number of students at the Bussey Institution remained small, but the regular instruction was maintained, and the buildings were kept in good repair. Professors Slade and Storer received a little over one fifth of their proper salaries. The Director of the Arnold Arboretum has been husbanding his resources for several years past; so that he will have at his disposal for immediate expenditure at least $10,000, besides the ordinary income of the Arnold Fund, whenever the long-pending negotiations with the City of Boston for the use of the Arboretum as part of the City's system of parks are brought to an issue, and the planting of trees, shrubs, and herbaceous plants in a permanent arrangement can properly be begun. The report of the Director (p. 122) shows that the energy, which he has been prevented from putting forth in the Arboretum proper, has only been diverted into other productive fields.

A report from the Director of the Chemical Laboratory is for the first time appended to this Report (p. 106). The Director's statement gives a striking picture of the activity which pervades the University Laboratory, not only as a place where elementary and advanced chemistry are taught to a large number of students, but also as a place of research, where the knowledge of chemistry is constantly extended by the diligent labors of professors, assistants and students. The report of the Director is commended to the attention of any friends of the University who may have imagined that the scientific activity and productiveness of the chemical department had diminished, or was in danger of being elsewhere surpassed. It is proposed to embody in this annual Report a similar statement of the work done each year in the department of physics, as soon as this department shall have been concentrated in the new Laboratory. Indeed it is desirable that the President's Report should contain concise descriptions of the work done each year in all the scientific establishments of the University. The Botanic Garden, Museum of Comparative Zoölogy, Chemical Laboratory, Observatory and Arnold Arboretum being already represented in the Report, no large additions would be needed to make the representation complete.

The Library was crippled during the year 1881–82 by a reduction in its staff. Whenever the expenses of the College threaten to exceed its receipts, the Corporation turns to the Library as the best place in which to reduce expenses, because Library work can be postponed while teaching cannot. The administration and service of the Library cost about $20,000 a year, and since they are not endowed, their annual cost falls practically upon the College tuition-fees and the unrestricted funds. The book funds produce nearly $12,000 a year; and to order judiciously, collate, catalogue and place on shelves $12,000 worth of books, besides cataloguing, acknowledging, and assigning to their proper places all the maps, books, pamphlets, and prints annually given to the Library, requires a large amount of skilled labor. There are thousands of books in the Library which for want of money to spend upon cataloguing, have never been entered in the public catalogue begun in 1860. The use of the Library increases from year to year, and involves an increased expenditure for service. The Bulletin and the Bibliographical Contributions issued from the Library have a permanent value for scholars, and are a credit to the University; but their publication costs labor and money, and could not be maintained were it not for the annual support given to them by a few gentlemen who are interested in such work.

In spite of all these legitimate demands for additional outlays, and in spite of the many advantages of a steady rate of expenditure, such as is needed for the maintenance of a permanent staff, the Corporation were obliged to instruct the Librarian, on the 12th of December, 1881, to reduce the expenses of the Library fifteen hundred dollars a year below the expenses of 1880–81, and to effect this reduction as soon as agreements already entered into would permit. The reduction of expenses actually effected in 1881–82 under this vote was $1057.31, it being impossible to secure the full reduction contemplated until the year now current. The work of the Library is seriously in arrears, and the present staff cannot bring it up. In consequence of delays at the Library in ordering books, and delays at the agencies in procuring them, the income of the book-funds has been accumulating to such an extent that $25,000 are available for the purchase of books during the current year. It is doubtful if even this most pressing work of ordering books to that amount, and then making them ready for circulation, can be well and promptly done. What the Library greatly needs, is funds amounting to at least $400,000, the income of which could be applied to the cost of administration and service. Its book funds are already considerable; but to keep all the books in a great library in such order that each one can be found on demand, issue large numbers of them incessantly to readers in a well warmed and lighted room, keep them all in repair, and incessantly replace thousands of them each on its shelf, costs annually a great deal more than to buy each year the few thousand books, the acquisition of which may reasonably be desired. The Eben Wright Fund of $100.000., which will probably come into the possession of the Corporation on the 1st of January, 1884, is to be devoted to the cost of administration and service in the Library, and will give a welcome relief; but three more such funds could be well applied in the same direction.

Three points are to be noticed in the present excellent administration of the Observatory: in the first place the Director prefers large pieces of routine work, in which some valuable results are sure to be obtained, to bits of occasional work which may perhaps possess more immediate interest, but which involve expense, and are liable to be interfered with at the critical moments by bad weather; secondly, he has devoted the Observatory, in large part, to astronomical physics, without neglecting, however, such purely astronomical work as had been already undertaken or falls in his way; thirdly, he has exerted himself, and with a good measure of success, to get all the valuable work done by his predecessors reduced and published, and he is strenuously endeavoring to reach the point of publishing current observations with no more delay than is necessary for their reduction and proper discussion. These principles of his administration must commend themselves to all intelligent friends of the Observatory; for they are economical as regards expenditure and watchful of the return for every outlay, judicious as regards the selection of a limited field to be especially cultivated, just as regards past administrations which, for lack of means, were obliged to leave whole series of interesting observations unpublished, and efficient as regards the prompt and thorough utilization of all the instruments and resources of the establishment. The long list of papers published during the year by the officers of the Observatory (see p. 117), is an index of the scientific activity which characterizes the place.

By making wise and fruitful application of the additional income which the subscription of 1878 placed at his disposition for five years, the Director and his associates have shown what good use can be made of at least $5000 a year in addition to the income of the existing funds. Sympathy with a pure scientific ardor, respect for the labors and sacrifices of devoted men, living and dead, who have given themselves without reserve to the pursuit of astronomical science in the Cambridge Observatory, pride in the past achievements of American astronomers, and hopeful anticipation of future progress, all unite to further the efforts of the Overseers' Committee on the Observatory to raise this year a permanent fund of $100,000.

The Museum of Comparative Zoölogy received very important accessions during 1881–82, among which the chief were, — a mass of fossil vertebrates, mainly mammalian, brought by Messrs. Garman and Sternberg from Wyoming, Kansas, and Texas, a large collection of insects made in Washington Territory by Dr. Hagen, an important collection of Solenhofen fossils purchased from Mr. E. Haeberlein, and an immense and very valuable collection of the Silurian fossils of Bohemia brought together by the late J. M. von Schary, and bought from his heirs. Sundry less considerable collections of fossil plants, mounted animals and skeletons, palaeozoic invertebrates, and fossil fishes, were also purchased.

The official publications of the Museum were even more numerous than those of the preceding year, consisting of eleven numbers of the Bulletin (877 pages with 32 plates), and two numbers of the Memoirs (171 pages with 14 plates); and many other publications, based upon materials belonging to the Museum, were made during the year by the Curator, the Assistants, and other specialists, in the transactions of various academies and in several scientific journals.

Good progress was made towards finishing the new corner-block of the Museum; the building was plastered, and a few of the rooms are already occupied. A large amount of work was done in clearing the exhibition rooms of material temporarily stored in them, and in arranging the systematic collections of mollusks, fishes, birds, and radiates, and the Indian, Australian, and African faunal collections.

It will not be supposed that all these things were done in 1881–82, with the year's income of the funds appropriated to the Museum — namely, with about $27,000. The collections alone, made or bought during the year, cost more than $38,000. In 1881–82, the Curator, as in many a year preceding, took upon himself heavy charges for building, furnishing, collecting, arranging, and publishing. The great expenditure of money and labor at the Museum for nine years past has been sagaciously managed upon a far-reaching plan, the fruits of which cannot fully appear for several years to come; but an important stage in the development of the establishment as a school of natural history will be reached next October when the new laboratories of zoölogy and geology will be ready for use.

After due consideration, and consultation with the Medical Faculty and some of the instructors at the Bussey Institution, the Corporation and Overseers established a professorship of veterinary medicine in the University; and in the course of the summer Mr. Charles P. Lyman, a Fellow by examination of the Royal College of Veterinary Surgeons, London, was elected to the chair. Since the opening of the current academic year, a Faculty of veterinary medicine has been organized, a course of instruction covering three years has been arranged, and in September, 1883, pupils will be received. The objects which the University had in view in organizing this new department, were briefly these: To train year by year a few competent and trustworthy practitioners; and to contribute to the progress of a branch of science which deals with many questions of public health and with great pecuniary interests.

The experiment of giving instruction in Chinese at the University was brought to a sad end by the death of Mr. Ko. The original plan provided for a five years' experiment, which would have been more hopeful than one of only three years; but the late Mr. Francis P. Knight, who raised the original subscription in 1877, was obliged to offer higher pay than he expected, in order to secure a competent teacher, so that the subscription was insufficient in amount for more than three years, and the contract with Mr. Ko was made for three years from September 1, 1879. As it was, the experiment cost the College $2,954.51 (beside all that the original subscribers contributed, and beside the subscription which was raised last spring for the widow and children); and it remains to be seen whether any beneficial results will ever flow from it. One student whose attainments in Chinese were remarkable went to China, but has returned out of health. Mr. Ko's two oldest sons are more likely to profit by the experiment than any other persons; for they learned some English, and imbibed some Western ideas.

At the beginning of the year the Dining-Hall Association did not have as large a number of members as usual, and the number steadily diminished, until in February there were less than four hundred members. The price of the board during the first three months had been $5.00 a week, and most of the poorer students had left the Hall because they could get board in the town for $4.00 a week, or even less. The majority of the Directors had believed that it was safer to provide board acceptable to persons who were able and willing to pay $5.00 a week, than to cut down the board, and so attempt to keep in the Hall those who did not wish to pay more than $4.00, at the risk of dissatisfying the greater number; but the event shortly proved that the Association could not spare the large body of students who desired cheap board. Thereupon the Directors instructed the Steward to take any measures necessary to reduce the price of board, and requested the Corporation to guarantee that the price should not rise above a maximum to be specified. This request was probably made because the Corporation had given this guaranty once before for the Association, — namely, in the autumn of 1876, the only other time when the number of members fell below 400. The difficulties of the Directors were increased by a certain distrust of the accuracy of the monthly statement of accounts which prevailed among the members of the Association. A committee of the Corporation examined the accounts, satisfied themselves that they were essentially correct, and reported to the Corporation that the price of board did not exceed $5.00 a week for the first three months, that it was less than $5.00 for the month of January, with a little over four hundred members in the Association, and that it was quite within the power of the Directors to keep the price below $5.00 with three hundred and fifty members in the Hall, and to reduce the price if the numbers increased. The Corporation thereupon voted, — "That in the opinion of the Corporation it is unnecessary for them to guarantee the price of board, and that interference by the Corporation with the business of the Association is in general undesirable." The result was, that the Directors, with the help of a large committee appointed to recruit the Association, succeeded in getting safely through the year. The numbers gradually increased, until in May the average membership was four hundred and fifty-seven; the price of board was $5.00 a week from October to April, and $4.54 a week for April, May, and June. The lesson that the Directors of the Association can extricate themselves from difficulties by the use of their own discretion and powers without any help from the Corporation is a wholesome one. Since it is certain that the College authorities could not carry on the Dining Hall, it is a satisfaction to have some assurance that it can be successfully carried on by the Association as now organized; for the Hall is of great service to the University.

In February last, a co-operative society was organized among the students to carry on business in fuel, books, new and second-hand, stationery, second-hand furniture, and a few other articles which students use. The society also undertook to procure from certain Boston and Cambridge tradesmen discounts from regular prices for all its members. Nearly six hundred students joined the society. In its first ten months it has done a safe and useful business to a moderate amount, and has induced all dealers within the range of its competition to reconsider their prices. Its business is limited by the fact that it is all done for cash; for many students prefer getting credit at high prices to paying cash at low ones. The Corporation gave the society the use of the old gymnasium for one year from March 1, 1882.

The subscription of $75,000 for the endowment of the new Physical Laboratory was made up during the past summer, and $22,000 were paid in by September 1. The condition of the anonymous gift of $115,000, wherewith to build a suitable laboratory, having been thus fulfilled, the Corporation set about the preparation of the plans for the building, Mr. Alexander Agassiz having general charge of the undertaking as a committee of the Corporation. The professors and instructors in the department of physics have all given careful attention to the plans, and it is confidently expected that spacious, well-arranged, and thoroughly equipped laboratories, ample cabinets, and convenient lecture-rooms will be the product of their studies. The building will probably be begun in the coming spring.

The annual appointments called University Lectureships continue to serve the good purpose of procuring from gentlemen, not otherwise connected with the University, occasional courses of valuable lectures which are open to the public, sometimes on payment of a fee, and sometimes gratuitously. In 1881–82 three such courses were given,— the first, by Mr. Thomas Sergeant Perry, on Tuesday afternoons in Sever Hall, a course of thirty lectures on English literature; the second, by G. Stanley Hall, Ph.D., on Saturday mornings in Wesleyan Hall, Boston, a course of six lectures on pedagogical subjects; and the third, by General Francis A. Walker, on Tuesday evenings in Sever Hall, a course of four lectures on American agriculture and manufactures.

Many of the College classes which have graduated within thirty years and a few of the older classes have raised a class fund, the income of which is generally used for class expenses, such as printing and circulating periodical reports and providing entertainments. Some of these funds have been lost, and others seriously impaired by injudicious investment; nearly all of them are held in an irregular way, without any attention to legal forms, and without any specification of the uses to which they are ultimately to be applied. The aggregate of these funds is already considerable; and during recent years each class has provided a fund, and the amount of this provision tends to increase. It would not be difficult to devise a plan for making all these funds much more secure than they now are during the life of each class, and for disposing of them in some appropriate manner as each class dies. For example, the Association of the Alumni might furnish from its officers a small body of trustees to hold class funds, to pay the income of each fund to the order of the class secretary, and to dispose of each fund by fixed rules upon the extinction of the class to which it belonged. This subject is respectfully commended to the attention of the alumni.

The measures adopted last year, and described in the last Report, for preventing the continuance of an annual deficit after the year 1881–82, answered the end in view. The deficit for 1881–82 ($14,738.64), was not so large as was feared, and for the current year there will probably be a small surplus.

Since September 1, 1869, the expenditures for the purchase of land and the erection or reconstruction of buildings for University uses have been constant and heavy.

Including the contracts now in process of execution, and the cost of the proposed physical laboratory, and excluding all repairs and all improvements which do not amount to reconstruction, the sum total of these expenditures is not less than $2,300,000. (For a list of items see Appendix III.). Of this amount about $510,000 yields some income; the rest is wholly unproductive. The buildings erected within this period, including those already projected and provided for, fairly meet the present needs of the University; and in the near future a building to cost $250,000 is to be erected from proceeds of the Hastings bequest. The attention of the friends and supporters of the University should now be turned to the increase of the quick capital, or invested funds, and especially of unrestricted funds and of funds devoted to such comprehensive purposes as salaries, retiring allowances, scholarships for undergraduates, special students, graduates, or professional students, administration and service in the Gymnasium, Chapel, Library, or Dining Hall, and the maintenance of the several scientific laboratories. There is a variety of objects, both large and small, as great as the diversity of intellectual interests which the University represents. Among large objects may be mentioned twenty-eight unnamed professorships of as many different subjects which await endowment; among small, the numerous scholarships needed for the promotion of post-graduate and professional study. It would be a material improvement if the salaries of the President and Treasurer were provided for by endowment; for these two salaries are now a heavy charge upon the unrestricted income of the University, and they are annually fixed by a small board of which both those officers are members. Any small fund given in partial support of a large object will be continuously useful, in proportion to its size and the importance of the object, and will faithfully perpetuate the memory of the giver. Thus in 1727 the Rev. Thomas Cotton, a dissenting minister of London, and Bridget his wife, gave the College £100, directing its income to be appropriated to the "augmentation of the President's salary for the time being." The President still receives a modest addition to his salary from the Thomas Cotton fund. It may be doubted whether a building is, after all, so durable and desirable a memorial as a fund, the income of which is devoted to an object of permanent interest and worth. Buildings get out of fashion and decay, or are remodelled and converted to new uses. The buildings which the College occupied in the 17th century have all disappeared; of the four buildings which belong to the 18th century, three have been put to new uses, and two of these three have been completely transformed as to their interiors several times; but the permanent funds which have come down from those centuries are still doing the very work which the givers meant them to do, and time only adds to the interest with which they are regarded.

The usual information concerning the number of students, and the honors, prizes, and degrees given in 1881–82, together with a list of the examining committees appointed for that year by the Board of Overseers, will be found in the Appendix (IV–VIII). The attention of the Overseers is respectfully invited to the following reports from the Deans of the several Faculties, the Secretary of the Academic Council, the Librarian, the Directors of the Botanic Garden, Observatory, Chemical Laboratory, and Arnold Arboretum, and the Curator of the Museum of Comparative Zoölogy.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, January 4, 1883.

REPORTS

OF THE

DEANS OF THE FACULTIES, THE SECRETARY OF THE ACADEMIC COUNCIL, THE LIBRARIAN, THE DIRECTORS OF THE BOTANIC GARDEN, OBSERVATORY, CHEMICAL LABORATORY, AND ARNOLD ARBORETUM, AND THE CURATOR OF THE MUSEUM OF COMPARATIVE ZOÖLOGY.

REPORTS.

To the President of the University:

Sir, — In accordance with the votes of the governing boards of the University, communicated to me in your letter of March 18, I entered upon the duties of Dean of the College Faculty on Commencement Day, when Professor Dunbar resigned the office which he had administered with such ability and success for nearly seven years. I have the honor to submit the following report on the condition of the College during the Academic year 1881–82.

At the beginning of the year the whole number of undergraduates was eight hundred and twenty-three. The Senior class numbered one hundred and eighty-two. Of these, one was subsequently obliged to withdraw on account of ill health, and one died a short time before Commencement; one was required to leave College for persistent violation of the regulations relating to attendance, one was refused his degree for the same reason, and five failed to obtain their degrees on account of deficiencies of scholarship. On the other hand, one member of the class who had been obliged, for personal reasons, to leave College at the end of his Junior year, was permitted to take the examinations and graduate with his class; and five former members, who had been removed to a lower class on account of deficiencies of scholarship, succeeded so far in making good those deficiencies that three of them were recommended for the degree, and two were restored to their class with the privilege of graduating in some future year on making up the deficiencies still remaining. The net result of these losses and gains was a graduating class of one hundred and seventy-seven.

The number of failures to obtain the degree, due to deficiencies of scholarship, during each of the past seven years, is shown in the following table: —

	1876.	1877.	1878.	1879.	1880.	1881.	1882.
Passed in all their work . . .	135	170	144	189	162	182	177
Failed, but can make up . .	6	17	11	5	6	9	7
Failed, and must repeat the year	3	2	4	..	..	..	..

The numbers of the three other classes, and the changes of all kinds in their composition from October, 1881, to October, 1882, are as follows: —

	Present, October, 1881.	Loss.	Gain.	Present, October, 1882.
Class of 1883	(Juniors) 207	13	10	(Seniors) 204
Class of 1884	(Sophomores) 217	25	18	(Juniors) 210
Class of 1885	(Freshmen) 217	23	14	(Sophomores) 208

The nature of the losses and gains of the several classes is shown by the following table: —

	Class of 1883.	Class of 1884.	Class of 1885.	Total for three Classes.
LOSSES.				
Left College without completing the year	6	11	6	23
Left College after completing the year	2	7	6	15
Removed to a lower class	...	6	4	10
Advanced to a higher class	5	1	7	13
Total loss	13	25	23	
GAINS.				
From higher classes	3	...	7	
From lower classes	2	7	...	
Newly admitted	5	11	7	
Total gain	10	18	14	

It will be seen that thirty-six students who were members of these three classes last year have not returned to College this year. Of these, one died in the summer vacation in consequence of a wound received at the hands of a United States soldier at Fort Popham, Me.; twelve withdrew voluntarily after completing the work of the year, and sixteen without completing it, for various reasons of a personal nature; four withdrew after having received notice that their deficiencies of scholarship were such that they could not go on with their classes; and three were required to leave before the end of the year in consequence of persistent neglect of their college duties. The last two categories are included in the figures for 1882 in the following table, which shows the number of students who in the last eight years have been removed from their classes for deficiencies of scholarship: —

	1875.	1876.	1877.	1878.	1879	1880.	1881	1882.
Removed to lower classes . .	19	28	17	25	14	22	18	14
Withdrawn during the year .	13	8	16	4	11	4	7	8
Total	82	86	33	29	25	26	25	17
Whole number of students .	716	776	823	818	819	813	829	823

At the examination for admission to the Freshman class in 1882, some slight changes in the requirements, announced two years ago, went into effect. The changes referred to were adopted in accordance with the suggestions of conferences of instructors in several New England colleges, which met for the purpose of bringing about a greater degree of uniformity in the requirements for admission. In Latin the new requirements prescribe Books I.–VI. of the Aeneid (or Books I.–V. with the Eclogues), instead of Books I.–IV. and the Eclogues, and permit the substitution of Sallust's Catiline for one book of Caesar. In the Latin elective subjects five, instead of four, orations of Cicero are specified for examination, and an examination in the translation at sight of average passages from the Aeneid and from Ovid's Metamorphoses is substituted for the examination on Books V.–IX. of the Aeneid. In this group, moreover, there are now three papers of one hour each, as in the Greek elective group, instead of two of an hour and a half each. In English Composition the examination was extended to an hour and a half, the additional half-hour being given to the correction by the candidate of specimens of bad English.

The examinations at the end of June were held in Cambridge, Exeter, N. H., New York, Philadelphia, Cincinnati, Chicago, San Francisco, and St. Louis, — in the last-named city for the first time. The preliminary examination of 1881 had given good reason to look for an unusually large number of candidates for admission this year, and this expectation was not disappointed. The following table shows the number of candidates and the general result of the examinations under the present method for each of the past three years: —

	1880.	1881.	1882.
Candidates offered	236*	253	315
" admitted	216	231	286
" " clear . .	82	99	116
" rejected	20	22	29

The various combinations of elective groups offered by candidates each year since the establishment of the present method of examination are shown in the following table. It will be observed that this year thirty-seven candidates offered more than the two groups required. Of those who offered only two groups, about three fourths presented Greek and Latin. The remaining combinations were offered by comparatively small numbers, but a growing preference for Latin and Physical Science is noticeable.

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[*] In 1880 the whole number of candidates was 278, of whom 42 were examined by the old method.

Number of Candidates who offered	1878.	1879.	1880.	1881.	1882.
Latin, Greek, Mathematics, and Physical Science	2	8	2	4	6
Latin, Greek, and Mathematics . . .	4	8	15	14	17
Latin, Greek, and Physical Science . .	2	8	7	5	11
Latin, Mathematics, and Physical Sci. .	2	. .	2	1	3
Greek, Mathematics, and Physical Sci. .	. .	1	. .	1	0
Latin and Greek	104	109	159	177	204
Latin and Mathematics	8	14	17	13	12
Latin and Physical Science	9	23	20	25	41
Greek and Mathematics	1	2	. .	2	5
Greek and Physical Science	1	1	4	. .	3
Mathematics and Physical Science . .	5	15	10	11	13
Total number of candidates . . .	133	179	236	253	315

The actual numbers and the percentage of candidates offering each group in 1881 and 1882 — the only years in which all candidates have been examined under the present method — were as follows: —

	1881.		1882.	
Whole number of candidates	253		315	
Number offering		Per ct.		Per ct.
Latin	239	94	294	93
Greek	203	80	246	78
Mathematics .	46	18	56	18
Physical Science	47	18	77	24

The results of the examinations in the several subjects of the present requirements since they were first used are as follows: —

1878. 133 Candidates. 1879. 179 Candidates. 1880. 286 Candidates. 1881. 253 Candidates. 1882. 315 Candidates.	PRESCRIBED SUBJECTS.										
	Caesar and Virgil.	Latin at Sight and Composition.	Xenophon or Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Plane Geometry.	Physics.	English Composition.	French or German.
Percentage failing in each study.											
1878	14	7.5	29	18	20	13	31.5	43	14	19	36
1879	8	11	20	23	18	14.5	28.5	37	19	28.5	21
1880	14	6	17	17	15	14	29	36	11	17	13
1881	8	6	12	18	15	14	25	27	7	10	18
1882	7	11	7	16	11	12	27	20	14	15	15

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<tr><th></th><th colspan="11">ELECTIVE SUBJECTS.</th></tr>
<tr><th></th><th colspan="2">Cicero and Virgil.</th><th>Latin at Sight and Composition.</th><th>Herodotus.</th><th>Greek Comp.</th><th>Iliad.</th><th>Trigonometry.</th><th>Solid Geometry.</th><th>Elective Physics.</th><th>Chem. or Botany.</th></tr>
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<tr><td>1882 . . . . . .</td><td>13</td><td>11</td><td>29</td><td>10</td><td>19</td><td>9</td><td>45</td><td>27</td><td>17</td><td>18</td></tr>
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Of the two hundred and eighty-six candidates who were admitted to the Freshman class, three passed further examinations and were admitted to higher classes, and two hundred and forty-five entered the Freshman class. Of the remaining thirty-eight, some are known to have gone to other colleges, and some intend to enter Harvard College next year; but a large number have undoubtedly taken the examination merely to obtain our certificate of admission, and without any intention of entering college at all.

The present Freshman class began the work of the year with a membership of two hundred and sixty-four, made up as follows: —

Admitted in 1882	245
Previously admitted	14
Removed from a higher class	5
Total	264

The whole number of candidates who offered themselves for a preliminary examination this year was two hundred and eighty-seven, of whom two hundred and thirty-three obtained certificates, having passed in at least five subjects. The following table exhibits the general results of the preliminary examinations on the present requirements for four years: —

Number of candidates who passed in	1879.	1880.	1881.	1882.
Five subjects	38	30	38	40
Six "	29	24	30	28
Seven "	23	31	46	46
Eight "	29	33	65	58
Nine "	13	22	17	33
Ten "	10	10	19	24
Eleven "	3	..	5	4
Received certificates	145	150	220	233
Failed to pass in five subjects	70	64	46	54
Total number of candidates	215	214	266	287

The next table shows, for the same period, the proportion of candidates examined in each subject under the present method, and the proportion of failures in each: —

Preliminary Examinat'n. 1879, 215 Candidates. 1880, 214 " 1881, 266 " 1882, 287 "	Caesar and Virgil.	Latin at Sight.	Xenophon or Greek Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Geometry.	Physics.	English.	French.	German.
Percentage of the whole number of candidates who were examined in each study.												
1879	89	86	74	80	77	96	93	55	55	69	56	7
1880	92	88	78	76	84	97	87	46	61	58	64	5
1881	88	86	78	79	76	97	82	46	74	61	54	5
1882	93	98	77	88	88	97	88	41	75	64	51	5
Percentage of failure among those examined in each study.												
1879	24	25	33	44	23	26	52	78	15	53	13	14
1880	25	25	25	26	89	22	50	61	7	84	21	80
1881	15	19	28	24	22	21	85	41	17	19	17	14
1882	20	26	9	30	27	17	37	27	12	37	17	14

It is gratifying to report that the order of the College during the past year was very satisfactory. The Faculty was not called upon to impose any penalty for disorder beyond an admonition in a single case.

The courses of instruction for 1881–82, with the names of the several instructors, the numbers of students* of various classes and departments in regular attendance on each, the number of sections into which the students were divided, and the number of hours of attendance per week for instructors and for students, are exhibited in the tables given on pages 62–67. The whole of the work done by undergraduates, however, is not shown by this statement, as a considerable number of them took one or more graduate courses, having carried their studies in special departments sufficiently far to enable them to do so.

Instruction in Elocution was given by Messrs. Ticknor, Sargent, and Jones to fifty-nine Seniors, sixty-six Juniors, forty-eight Sophomores, and seventy-three Freshmen. The Freshmen were taught in four sections, each one hour a week. During the first half-year, the Sophomores were similarly taught in three sections; in the second half-year by individual appointments of ten minutes each, once a week. The Juniors and Seniors received instruction by individual appointments of fifteen minutes each week.

Among the valuable opportunities for instruction enjoyed by the students of the College it is proper to mention the public lectures given each year under the auspices of the University by men of distinction in their special departments, and the evening readings by College instructors in ancient and modern classics. In 1881–82 one hundred and twelve public lectures were given on subjects in Theology, Classical Philology, Archaeology, Pedagogy, English Literature, Political Economy, and Natural History; and forty-seven evenings were occupied with readings from Hebrew poetry, Homer, Aeschylus, Sophocles, Aristophanes, Theocritus, Terence, Catullus, Sallust, Horace, Livy, Tacitus, Chaucer, and Shakspere.

In arranging the elective studies for the present academic year,

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* To designate the various kinds of students in the several courses, the following abbreviations are used: Se. for Senior, Ju. for Junior, So. for Sophomore, Fr. for Freshman, Sp. for Special Student, Gr. for Graduate Student, Law for Law Student, Di. for Divinity Student, and Sc. for Scientific Student.

PRESCRIBED STUDIES.

Instructors.	Subjects.	Text-Books.	No. of Students.	No. of Sections.	Hours per week for Students.	Hours per week for Instructors.
		FRESHMEN.				
Profs. Goodwin, J. W. White, and Dyer, and Messrs. Croswell, Preble, and Phillips	Greek	[*Maximum Sections.*] — Lysias (five orations). — Plato (Apology). — Homer (Odyssey, eight books).—Sidgwick's Greek Prose Composition, Part I. — Translation at sight. — Goodwin's Greek Moods and Tenses. — Selections from Grote's History of Greece	103, 1 So.	2 or 3	3	7
		[*Advanced Sections.*] — In addition to the above, Aristophanes (The Clouds) and fifteen lectures on Greek Etymology in connection with Iliad XVIII.	72, 1 Sp.	1 or 2	3	5
		[*Minimum Section.*] — Herodotus and Thucydides (Selections in Goodwin's Greek Reader). — Homer (Iliad, Books IV.-IX.). — Translation at sight. — Composition. — Goodwin's Greek Moods and Tenses. — Selections from Grote's History of Greece	35, 1 Ju., 4 Sp.	1	3	3
Profs. Lane and Allen, and Messrs. Croswell, Preble, and Phillips	Latin	[*Maximum Sections.*] — Livy (Books XXI.-XXII.). — Horace (Odes and Epodes). — Cicero (De Natura Deorum, Book I.). — Translation at sight. — Latin Prose Composition. — Selections from Mommsen's History of Rome	106, 5 Sp.	3 or 6	3	12
		[*Advanced Sections.*] — In addition to the above, Plautus (Trinummus) and Cicero (De Amicitia)	91	1 or 2	3	5
		[*Minimum Section.*] — The same authors as the maximum sections, but in smaller quantities. — Translation at sight. — Latin Prose Composition	8, 3 Sp.	1	3	3
Prof. Dyer	Greek and Latin	Twenty lectures on Greek and Roman Literature	208, 5 Sp.	1	1 till March.	1 till March.
Prof. Cook, and Messrs. Sheldon and Lutz	German	Sheldon's Grammar. — The Joynes-Otto German Reader. — Hauff's Märchen. — Deutscher Novellenschatz (Vol. XIV.). — Writing German	99, 1 Ju., 5 Sp.	2 or 4	3	10
		[*Advanced Sections.*]. — A more extended course in the same books	76, 1 Sp.	1 or 2	3	5
Prof. Jacquinot	French	Brachet (Petite Grammaire Française). — Bôcher's Reader. — A. Achard (Le Clos Pommier). — Feuillet (Roman d'un jeune homme pauvre)	27, 1 Ju., 1 So., 5 Sp., 3 Sc.	1	3	3
Profs. C. J. White and Byerly, and Dr. B. O. Peirce	Mathematics	[*Maximum Section.*] Algebra (Todhunter, Chapters I. — XXXVI., XLVI., LIII.). — Analytic Geometry (Lectures)	35, 1 Se., 3 Ju., 8 So., 2 Sp.	1	7 in two weeks.	7 in two weeks.
		[*Minimum Sections.*] — Algebra (as above). — Chauvenet's Solid Geometry. — Wheeler's Plane Trigonometry. — Analytic Geometry (Lectures)	180, 4 Sp., 1 Sc.	8	7 in two weeks.	28
Dr. Hall	Physics	[*Maximum Sections.*] — Ganot's Physics (Mechanics, Hydrostatics, Pneumatics, Heat, and part of Light). — Lectures	33, 3 Sp.	1	2	2
		[*Minimum Sections.*] — The same, omitting the more technical portions.	176, 1 Ju., 5 Sp.	1	2	2
Prof. Jackson	Chemistry	Elementary Chemistry (twenty lectures)	209, 3 Sp.	1	1 after Christmas.	1 after Christmas.
		SOPHOMORES.				
Mr. Drennan and Dr. Gummere	Rhetoric	Hill's Principles of Rhetoric. — Exercises in Writing and Criticism	202, 7 Fr., 7 Sp., 3 Sc., 1 Law	4	2	8
Mr. Drennan and Dr. Gummere	Themes	Six Themes, corrected and rewritten	211, 2 Se., 4 Ju., 3 Sp., 2 Sc.			

		JUNIORS.				
Mr. Drennan and Dr. Gummere	Themes	Six Themes, corrected and rewritten	192, 9 Se., 1 Sp.			
Dr. Snow	Forensics	Four Forensics Theses substituted for Forensics, as allowed by the rules, by	187, 5 Se., 1 Sp. 14			
		SENIORS.				
Dr. Snow	Forensics	Four Forensics Written work substituted for one or more Forensics, as allowed by the rules, by	144, 5 Ju. 39			

ELECTIVE STUDIES.

Instructors.	Courses.	Subjects and Text-Books.	No. of Students.	No. of Sections.	Hours per week for Students.	Hours per week for Instructors.
Prof. Toy	Hebrew	Davidson's Grammar. — The Hebrew Bible	2 Se., 11 Di.	1	3	3
Prof. Lanman	Sanskrit	Whitney's Grammar. — Lanman's Reader	1 Se., 1 Ju., 1 Sp.	1	3	3
Prof. Greenough	Classics 1	Greek and Latin Comparative Philology. — Curtius's Etymology. — Papillon's Greek and Latin Inflexions	Omitted in 1881-82.		3	
Prof. Greenough	Classics 2	Practice in speaking and writing Latin, in connection with the elementary critical study of a Latin author. — Cicero (Brutus). — Ritter and Preller's Historia Philosophiæ	1 Se., 1 Ju., 3 Gr.	1	2	2
Prof. Dyer	Greek 1	Plato (Protagoras). — Sophocles (Ajax). — Euripides (Bacchae). — Aeschylus (Prometheus)	1 Ju., 18 So., 1 Sp.	1	2	2
Prof. J. W. White	Greek 2	Thucydides (Books VI., VII.). — Aristophanes (Birds). — Euripides (Cyclops)	5 Ju., 32 So., 2 Fr., 2 Gr.	1	2	2
Prof. J. W. White	Greek 3	Practice in reading at sight. — Herodotus (Books III.-VI.)	1 Se., 4 Ju., 52 So., 1 Fr., 1 Sp., 2 Gr.	1	2	2
Prof. Dyer and Dr. Phillips	Greek 4	Composition (First Course).— Sidgwick's Greek Prose Composition	2 Se., 3 Ju., 25 So., 1 Di.	2	1	2
Prof. Dyer	Greek 5	Composition (Second Course) — Sidgwick's Greek Prose Composition. — Sargent and Dallin's Materials and Models	7 Ju., 3 Gr.	1	1	1
Prof. J. W. White	Greek 6	Composition (Third Course). — Sidgwick's Greek Prose Composition. — Selected Exercises	7 Se., 1 Ju., 2 Gr.	1	1	1
Prof'rs. Goodwin and J. W. White	Greek 7	Thucydides (Books I., II.). — Aeschines (in Ctesiphontem). — Demosthenes (de Corona)	7 Se., 9 Ju., 2 So., 1 Fr., 1 Gr.	1	3	3
Prof. Goodwin	Greek 8	Plato (Republic). — Aristotle (Ethics I.-IV., X.)	11 Se., 4 Ju., 3 Gr.	1	3	3
Prof. Goodwin	Greek 9	Aeschylus (Seven against Thebes and Eumenides). — Sophocles (Oedipus at Colonus). — Aristophanes (Knights). — Pindar (Selections)	12 Se., 3 Ju., 2 Gr.	1	3	3

ELECTIVE STUDIES. — Continued.

Prof. Sophocles	Greek 10	Arrian (Anabasis)	5 Se., 6 Ju., 2 So., 4 Fr., 1 Sp.	1	2	2
Prof. J. W. White	Greek 11	The Private Life of the Greeks (Lectures)	17 Se., 17 Ju., 7 So., 1 Sp., 3 Gr.	1	1	1
Prof. Smith	Latin 1	Terence (Phormio, Andria, and Hautontimorumenos, Acts I., II.). — Cicero (Selected Letters). — Tacitus (Agricola). — Horace (Satires and Epistles). — Translation at sight	1 Se., 2 Ju., 52 So., 3 Fr., 1 Sp.	1	3	3
Prof. Greenough	Latin 2	Terence. — Cicero (Pro Murena). — Horace (Satires and Epistles)	1 Ju., 29 So., 1 Fr	1	2	2
Messrs. Croswell and Preble	Latin 3	Composition (First Course). — Nixon's Parallel Extracts. — Selected Exercises	3 Ju., 29 So., 1 Fr.	2	1	2
Prof. Smith	Latin 4	Latin Poetical Literature. — Lectures on the Latin Poets, with illustrative readings from Thackeray's Anthology	2 Se., 5 Ju., 4 So.	1	2	2
Prof. Greenough	Latin 5	Latin Prose Literature. — Cicero (against Verres). — Tacitus (Histories)	4 Se., 4 Ju., 2 So.	1	3	3
Prof. Lane	Latin 6	Suetonius (Lives of Claudius, Nero, Galba, Otho, Vitellius, Vespasian). — Tacitus (Selections from Books XI.-XV. of the Annals). — Juvenal (Selected Satires). — Translation at sight	6 Se., 25 Ju., 2 So., 1 Fr., 1 Gr.	1	3	3
	Latin 7	Composition (Second Course)	Omitted in 1881-82		1	
Prof. Lane	Latin 8	Plautus (Amphitruo, Trinummus, Miles Gloriosus, Rudens). — Lucretius. — Juvenal	18 Se., 4 Ju., 1 Gr.	1	3	3
Prof. Smith	Latin 9	Composition (Third Course). — Lectures on the Chria, with Exercises. — Potts's Passages for Translation into Latin	4 Se., 1 Ju., 3 Gr.	2	1	2
Prof. Child	English 1	Chaucer (Canterbury Tales). — Bacon (Essays). — Milton (Selected Poems)	8 Se., 2 Ju., 13 So., 3 Sp.	1	3	3
Prof. Child	English 2	Shakspere (seven plays)	18 Se., 17 Ju., 18 So., 1 Fr., 5 Sp., 1 Gr.	1	3	3
Prof. Child	English 3	Anglo-Saxon. — Sweet's Anglo-Saxon Reader	3 Se., 1 Ju., 2 So.	1	2	2
Prof. Child	English 4	Early English. — Mätzner's Altenglische Sprachproben	Omitted in 1881-82.		2	
Prof. A. S. Hill	English 5	Rhetoric and Themes (Advanced Course)	9 Se., 10 Ju.	1	3	3
Prof. A. S. Hill	English 6	Oral discussion	39 Se.	1	3 in two weeks	3 in two weeks.
Prof. A. S. Hill	English 7	English Literature of the Nineteenth Century	5 Se., 6 Ju., 11 So., 3 Sp., 1 Law.	1	1	1
Prof. Cook	German 1	Mügge (Am Malanger Fjord). — Wichert (Ein Schritt vom Wege). — Freytag (Aus dem Jahrhundert der Reformation)	4 Se., 9 Ju., 66 So., 4 Fr., 2 Sp.	1	3	3
Prof. Bartlett	German 2	Der Neue Plutarch (Vols. II. and III.). — Selections from the poets of the Nineteenth Century	1 Se., 4 Ju., 52 So., 1 Fr., 3 Sp., 1 Di.	1	3	3
Mr. Hodges	German 3	Hodges's Course in Scientific German. — Helmholtz, Virchow, &c. (Populäre Wissenschaftliche Vorträge)	4 Se., 4 Ju., 9 So., 1 Gr., 1 Di., 3 Sc.	1	2	2
Mr. Lutz	German 4	Composition and Grammar. — Sheldon's Grammar. — Otto's Materials for translating from English into German. — Zschokke (Der Todte Gast)	1 Se., 9 Ju., 11 So., 1 Fr., 2 Sp.	1	1	1
Prof. Bartlett	German 5	Biographies of Goethe and Schiller. — Echtermeyer's Collection of German Lyrics and Ballads	3 Se., 24 Ju., 4 So., 1 Sp.	1	3	3
Prof. Cook	German 6	Lessing (Emilia Galotti and Minna von Barnhelm). — Goethe (Egmont). — Wieland (Oberon)	10 Se., 49 Ju., 6 So., 2 Fr.	1	3	3
Prof. Bartlett	German 7	Schiller. — Lessing (Minna von Barnhelm). — Viehoff (Schiller's Leben). — Literary Histories of Kurz, Koberstein, and Hettner	19 Se., 7 Ju., 1 So.	1	3	3
Prof. Jacquinot	French 1	Brachet's Petite Grammaire Française (2e Partie). — Stahl (Histoire d'un lièvre). — G. Sand (Nanon). — J. Sandeau (Mlle. de la Seiglière)	1 Se., 54 So., 1 Fr., 2 Sp., 1 Sc.	2	3	6

Prof. Böcher	French 2	La Fontaine (Fables). — Taine (La Fontaine et ses Fables). — Racine (Oeuvres Choisies)	2 Se , 4 Ju., 18 So., 1 Fr.	1	3	3
Prof. Böcher	French 3	Molière (Oeuvres). — Corneille (Le Cid). — Montaigne (Selections). — Paul Albert (Littérature Française jusqu'au XVIIme siècle)	5 Se., 6 Ju., 6 So., 2 Fr., 3 Law, 1 Sc.	1	3	3
Prof. Jacquinot	French 4	Paul Albert (Littérature Française au XVIIIme Siècle). — Le Sage (Turcaret). — Montesquieu. — Voltaire. — D'Alembert. — Diderot. — J. J. Rousseau. — Buffon. — Gresset. — Piron (La Metromanie). — Marivaux. — Beaumarchais.	5 Se., 3 Ju., 4 So., 2 Fr., 2 Sp.	1	3	3
Mr. Bendelari	French 5	V. Hugo (Notre Dame de Paris). — Balzac (La Recherche l'absolu). — Cherbuliez (Le Comte Kostia). — T. Gautier (Le Capitaine Fracasse). — Scribe et Legouvé (La Bataille de Dames). — Labiche et Delacour (La Cagnotte)	28 Se., 26 Ju., 8 So., 2 Fr., 2 Sp.	1	3	3
Mr. Bendelari	Italian 1	Toscani's Italian Grammar. — Silvio Pellico (Le Mie Prigioni). — De Amicis (Racconti Militari). — Manzoni (I Promessi Sposi)	10 Se., 17 Ju., 13 So , 1 Sp., 4 Gr.	1	3	3
Mr. Bendelari	Italian 2	Ariosto (L'Orlando Furioso). — Tasso (La Gerusalemme Liberata). — Silvio Pellico (Francesca da Rimini). — Gherardi del Testa (three plays). — Nota (La Fiera). — Carrera (La Quaderna di Nanni)	6 Se., 6 Ju.	1	3	3
Mr. Bendelari	Italian 3	Boccaccio (Il Decamerone). — Petrarca (Le Rime). — Dante (La Divina Commedia; La Vita Nuova)	5 Se., 1 Ju., 1 Sp.	1	3	3
Mr. Bendelari	Spanish 1	Josse's Spanish Grammar. — El Eco de Madrid. — Gil Blas	17 Se., 10 Ju., 14 So., 1 Fr., 1 Gr.	1	3	3
Mr. Sheldon	Spanish 2	Comedias de Moratin. — Hartzenbusch (Obras Escogidas). — Cervantes (Don Quijote)	6 Ju., 1 So., 1 Sp.	1	3	3
	Spanish 3	Calderon. — Lope de Vega. — Early Spanish. — Outline of the History of Spanish Literature	Omitted in 1881-82.		3	
Prof. Palmer	Philosophy 1	Logic and Metaphysics. — Jevon's Logic. — Ferrier's Lectures on Greek Philosophy	3 Se. 20 Ju., 30 So., 1 Fr. 1 Sp., 1 Sc.	1	2	2
Prof. James	Philosophy 2	Psychology. — Taine (On Intelligence)	4 Se., 8 Ju., 10 So., 5 Sp.	1	2	2
Prof. Palmer	Philosophy 3	Ethics. — Mill's Utilitarianism. — Kant's Theory of Ethics. — Lectures and Theses	15 Se., 16 Ju., 1 Di.	1	3	3
Prof. James	Philosophy 4	Contemporary Philosophy. — Mill's Logic. — Theses	9 Se., 13 Ju.	1	3	3
Prof. Palmer	Philosophy 5	English Philosophy. — Locke. — Berkeley. — Hume	Omitted in 1881-82.		3	
Prof. Bowen	Philosophy 6	Early French and German Philosophy. — Bouillier's Histoire de la Philosophie Cartésienne. — Kant's Critique of Pure Reason. — Bowen's Modern Philosophy	17 Se., 21 Ju.	1	3	3
Prof. Bowen	Philosophy 7	German Philosophy of the Present Day. — Schopenhauer's Die Welt als Vorstellung und Wille. — Hartmann's Philosophie des Unbewussten	5 Se., 1 Gr.	1	3	3
Prof. Dunbar and Dr. Laughlin	Political Econ. 1	Mill's Principles of Political Economy. — Lectures on Banking and the Financial Legislation of the United States	23 Se., 97 Ju., 17 So., 2 Fr., 7 Sp., 1 Sc.	2	3	6
Prof. Dunbar	Political Econ. 2	Cairnes's Leading Principles of Political Economy. — Giffen's Essays in Finance. — Lectures and Theses	21 Se., 9 Ju., 2 Gr.	1	3	3
Dr. Emerton	History 1	Mediaeval and Modern History (introductory to courses six and seven). — Lewis's History of Germany. — Zeller's Histoire d'Italie	1 Se., 8 Ju., 18 So., 1 Fr.	1	2	2
Mr. Macvane	History 2	Mediaeval and Modern History (introductory to course eight). — The Student's Hume. — The Student's History of France	5 Se., 11 Ju., 65 So., 5 Fr., 3 Sp., 1 Sc.	1	2	2
Mr. Macvane	History 3	Constitutional Government in England and the United States (introductory to courses nine and eleven)	11 Se., 15 Ju., 56 So., 1 Fr., 3 Sp.	1	2	2
Prof. Gurney	History 4	Roman History to the Fall of the Republic, with especial reference to the Development of Political Institutions in Greece and Rome. — Mommsen's History of Rome	5 Se., 4 Ju., 5 So., 1 Sp.	1	2	2

ELECTIVE STUDIES. — CONTINUED.

Prof. Gurney	History 5	Later Roman and Early Mediaeval History (from Augustus to Charlemagne) with especial reference to Institutions. — Merivale's History of the Romans under the Empire. — Gibbon's Decline and Fall of the Roman Empire. — Arnold's Roman Provincial Administration	16 Se., 14 Ju., 2 So., 1 Fr., 1 Sp.	1	8	8
Dr. Emerton	History 6	General History of Europe from the beginning of the Ninth to the end of the Thirteenth Century	Omitted in 1881–82		8	
Dr. Emerton	History 7	The Revival of Learning and the Reformation (1300–1550). — Lectures	20 Se., 14 Ju., 2 So., 1 Fr.	1	8	8
Dr. Young	History 8	History of England to the Seventeenth Century (Constitutional and Legal). — Lectures	21 Se., 19 Ju., 2 So., 1 Fr., 2 Sp., 1 Gr.	1	8	8
Dr. Snow	History 9	Constitutional and Political History of the United States to the year 1850. — Lectures	56 Se., 49 Ju., 9 So., 2 Fr., 2 Sp., 1 Sc.	1	8	8
Mr. Macvane	History 10	European History during the Seventeenth Century and the first half of the Eighteenth	Omitted in 1881–82		8	
Mr. Macvane	History 11	European History from the Middle of the Eighteenth Century	62 Se., 53 Ju., 2 So.	1	8	8
Dr. Young	Roman Law 1	Institutes of Gaius and Justinian	17 Se., 8 Ju., 1 Gr., 2 Law.	1	8	8
Prof. Gurney	Roman Law 2	Institutes of Gaius. — Institutes and Digest of Justinian	3 Se., 2 Ju., 1 So.	1	1	1
Mr. Moore	Fine Arts 1	Principles of Delineation, Color, and Chiaroscuro. — Ruskin's Modern Painters, Elements of Perspective, and Elements of Drawing	7 Se., 6 Ju., 10 So., 8 Sp., 2 Sc.	1	2	2
Mr. Moore	Fine Arts 2	Principles of Design. — Ruskin's Modern Painters and Stones of Venice. — Woltman's History of Painting. — Crowe and Cavalcaselle's History of Painting. — Westrop's Handbook of Archaeology	1 Ju.	1	2	2
Prof. Norton	Fine Arts 3	Ancient Art. — Lectures	39 Se., 28 Ju., 5 So., 1 Fr., 2 Sp., 1 Gr., 1 Sc.	1	8	8
Prof. Norton	Fine Arts 4	Art from the Fall of the Roman Empire to the year 1600	Omitted in 1881–82		1	
Prof. Norton	Fine Arts 5	Greek Art	Omitted in 1881–82		2	
Prof. Norton	Fine Arts 6	Romanesque and Gothic Art from 1000 to 1350. — Lectures	13 Se., 11 Ju., 5 So., 2 Fr., 1 Sp.	1	1	1
Prof. Paine	Music 1	Harmony. — Richter's Harmony	3 Ju., 8 So., 2 Sp., 1 Sc.	1	2	2
Prof. Paine	Music 2	Counterpoint. — Richter's Counterpoint	1 Ju., 2 So.	1	8	8
Prof. Paine	Music 3	History of Music. — Von Dommer's Musikgeschichte	5 Sc., 2 Ju., 2 So., 2 Fr., 8 Sp.	1	8	8
Prof. Paine	Music 4	The Instrumental Music of Haydn, Mozart, Beethoven, Mendelssohn, and their successors	4 Se., 1 Ju., 1 So., 2 Sp.	1	1	1
Prof. C. J. White	Mathematics 1	Practical Applications of Trigonometry. — Principles of Surveying. — Spherical Trigonometry. — Applications of Spherical Trigonometry to Astronomy and Navigation	3 Se., 8 Ju., 8 So.	1	2	2
Dr. B. O. Peirce	Mathematics 2	Calculus (First Course). — Byerly's Differential Calculus	2 Ju., 27 So., 1 Fr., 1 Sp., 1 Sc.	1	2	2
Dr. B. O. Peirce	Mathematics 3	Todhunter's Theory of Equations. — Minchin's Statics	1 Se., 5 So., 1 Sc.	1	2	2
Prof. Byerly	Mathematics 4	Analytic Geometry (for students who had taken the Maximum Freshman Course in Mathematics). — Lectures	1 Se., 1 Ju., 9 So.	1	2	2
Prof. Byerly	Mathematics 5	Calculus (Second Course). — Byerly's Integral Calculus. — Boole's Differential Equations	2 Se., 5 Ju., 1 Sc.	1	8	8
Prof. Peirce	Mathematics 6	Analytic Mechanics, with an Introduction to Quaternions. — Clifford's Elements of Dynamic and Kerr's Rational Mechanics, with Selections from other works. — Lectures on Quaternions	1 Se., 5 Ju.	1	8	8

Prof. Eustis	Mathematics 7	Descriptive Geometry and Perspective. — Church's Descriptive Geometry. — Lectures. — Problems in Shades and Shadows, Perspective, and Stereotomy	2 Se., 2 Ju., 1 So, 5 Sc.	1	3	3
	Mathematics 8	Elliptic Functions	Omitted in 1881–82		2	
Prof. Byerly	Mathematics 9	Analytic Mechanics. — Lectures, with Walton's Problems in Theoretical Mechanics, Todhunter's Analytic Statics, Tait and Steele's Dynamics of a Particle, and Routh's Rigid Dynamics, for reference	6 Se.	1	3	3
Prof. Peirce	Mathematics 10	Studies in Quaternions and in Analysis. — Individual study, embracing a wide range of topics, under the supervision of the Instructor	5 Se., 1 Gr.	1	3	3
Prof. Lovering	Physics 1	Astronomy, Optics, and Acoustics. — Herschel's Outlines of Astronomy. — Deschanel on Sound and Light. — Tyndall's Heat as a Mode of Motion	6 Se., 2 Ju., 20 So., 2 Sc.	1	2	2
Prof. Trowbridge	Physics 2	Practical Exercises in the Labortaory, including the use of Instruments of Precision. — Kohlrausch's Physical Measurements. — Pickering's Physical Manipulations. — Everett's Physical Constants	7 Se., 10 Ju., 31 So., 1 Fr., 1 Sc.	1	3	3
Prof. Trowbridge	Physics 3	The Conservation of Energy. — Stewart's Conservation of Energy. — Tait's Recent Advances in Physical Science. — Youmans's Correlation and Conservation of Forces. — Maxwell's Theory of Heat. — Maxwell's Electricity and the Conservation of Energy	7 Se., 13 Ju., 6 So.	1	2	2
Prof. Lovering	Physics 4	Undulatory Theory of Light. — Electricity and Magnetism	Omitted in 1881–82		3	
Prof. Gibbs	Physics 5	The Spectroscope and its Applications	2 Se., 1 Gr.	1	3 till Christmas.	3 till Christmas.
Prof. Jackson & Dr. Mabery	Chemistry 1	Descriptive Chemistry, with Laboratory work	7 Se., 19 Ju., 69 So., 1 Fr., 3 Sp., 2 Sc.	2	3	6
Dr. Melville	Chemistry 2	Determinative Mineralogy and Lithology, with study in the Mineral Cabinet. — Dana's Text-book	18 Se., 14 Ju., 10 So., 1 Sp., 1 Gr., 2 Sc.	1	3	3
Prof. H. B. Hill and Dr. Mabery	Chemistry 3	Qualitative Analysis, with Laboratory work. — Hill's Lecture Notes	6 Se., 27 Ju., 2 So., 1 Sp., 1 Gr., 2 Sc.	1	3	3
Mr. Kinnicutt	Chemistry 4	Quantitative Analysis, with Laboratory Work	4 Se., 6 Ju., 2 Sp.	1	3	3
Prof. H. B. Hill	Chemistry 5	The Carbon Compounds. — Lectures and Laboratory Work	10 Se., 1 Ju., 1 Sp.	1	3	3
Prof. Jackson	Chemistry 6	Advanced Course in Inorganic Chemistry. — Laboratory work,	5 Se.	1	3	3
Prof. Cooke	Chemistry 7	Crystallography and the Physics of Crystals, with work in the Mineral Cabinet	Omitted in 1881–82.		3	
Mr. Davis	Natural Hist. 1	Physical Geography and Meteorology. — Lectures	18 Se., 14 Ju., 27 So., 3 Fr., 2 Sp., 5 Sc.	1	3	3
Dr. Mark	Natural Hist. 2	Zoölogy. — Huxley's Elementary Physiology	8 Se., 12 Ju., 26 So., 2 Fr., 2 Sp., 4 Sc.	1	2	2
Prof. Farlow	Natural Hist. 3	Botany. — Gray's Structural Botany. — Gray's Manual of the Botany of the Northern States	6 Se., 11 Ju., 21 So., 1 Sp., 3 Sc.	1	3	3
Mr. Davis	Natural Hist. 4	Geology. — Dana's Manual of Geology. — Lectures and Field work	29 Se., 14 Ju., 19 So., 2 Fr., 1 Sp., 8 Sc.	1	3	3
Prof Farlow and Prof. Faxon	Natural Hist. 5	Biology. — Lectures and Laboratory work	5 Se., 16 Ju., 6 So., 2 Sc.	1	3	3
Prof. Faxon	Natural Hist. 6	Advanced Zoölogy. — Lectures and Laboratory work	11 Se., 2 Sc.	1	3	3
Prof. Farlow	Natural Hist. 7	Advanced Botany. — Lectures and Laboratory work	5 Se., 8 Ju., 1 Sc.	1	3	3
Mr. Davis	Natural Hist. 8	Advanced Geology. — Lyell's Principles of Geology. — Lectures and Field work	12 Se., 5 Ju., 1 Sc.	1	3	3

the Faculty departed from their previous practice in two important particulars. With the concurrence of the Academic Council, the courses which are designed especially for graduates, and which have hitherto been printed separately, were consolidated with the undergraduate courses, so that all the courses in each department are now included in a single list; and a simpler classification of courses was introduced.

The distinction between graduate and undergraduate studies had lost whatever significance may have been originally attached to it. Its disappearance recalls that of another, now almost forgotten, distinction among elective courses, by which they were classed as Senior, Junior, and Sophomore studies. The former change indicated the direction our system of instruction would take in its development, — its tendency towards growth in the lines of the special departments, to the obliteration of all distinctions among studies, except such as grow out of their characters or mutual relations; the present change may be regarded as a final step in the same direction. The courses in each department now form, as a rule, a progressive series, adapted to the successive stages of a student's progress in that department, but bearing no necessary relation to the time of his graduation. The line that has hitherto been drawn, setting apart graduate from undergraduate studies, has not been observed in practice. Graduate students, particularly candidates for the degree of Master of Arts, have selected their studies indifferently from the two lists, and a large proportion of the students in the graduate courses has always been drawn from the higher college classes. Taking the year 1880–81 as an illustration, we find that the graduate students gave sixty-nine hours a week of attendance to undergraduate courses, fifty-seven to graduate courses; twenty of the one hundred and two undergraduate courses were taken by from one to three graduates; and of the twenty-four graduate courses, seventeen were taken by from one to eight undergraduates. When the graduate courses were first established, their separate publication was perhaps necessary to draw attention to the fact that such instruction was provided. That necessity no longer exists, or exists in a much smaller degree, and the consolidation of the two lists now accomplished gives a much more convenient as well as a more effective presentation of the resources of the University in each department of liberal study.

An incidental result of this change was to bring into greater prominence the unsatisfactory character of the existing classification of studies, which assigned to each course a value, in the sum of work required of a student, proportioned solely to the number of hours a week of attendance which it demanded. A large majority of the undergraduate courses had three exercises a week, but there was a considerable number of two-hour courses, and a small number of one-hour courses. In 1881–82 there were sixty-seven three-hour, twenty-five two-hour, and twelve one-hour courses. That the number of exercises was a very imperfect criterion of the amount of work required in any study was well known to the Faculty. Apart from the inequalities arising from the diversity of the subjects treated and the various methods of instructors, it is evident that, other things being equal, a course having a smaller number of exercises involves a greater amount of work proportionally than one having a larger number. A student who divides six hours of attendance among three courses undertakes a harder task than one who divides the same time between two courses, especially if the studies are in different departments. The studies most underrated in the estimate by hours were one-hour undergraduate courses,—particularly those in Greek and Latin Composition, which require a disproportionately large amount of work outside of the recitation-room,—and the graduate courses. The latter had for the most part less than three exercises a week; the actual numbers in 1881–82 were, of three-hour courses nine, of two-hour courses twenty-four, and of one-hour courses six. These two-hour courses are among the most difficult that a student can take, and the injustice of counting them for less than an undergraduate course of three hours is obvious.

This state of things had come about by gradual growth, with the development of the elective system. No complete remedy for it is possible. No rule can be devised that will exact a uniform requirement of students selecting their work from a wide range of studies such as our system offers. But for this very reason a simple classification of studies is desirable: among courses so varied it is not wise to attempt to draw too fine distinctions. With a view therefore to greater simplicity, the Faculty, abandoning the fallacious standard of the number of hours of instruction, adopted a new system, under which all elective studies are divided into two classes only, known as *courses* and *half-courses*, according to the estimated requirement of work in each. Under this arrangement a student is required to take, each year after his Freshman year, four courses, or an equivalent amount of courses and half-courses. All three-hour studies and all two-hour graduate studies are accounted full courses; all one-hour studies, with one or two exceptions, half-courses. The difficulty in dealing with the two-hour undergraduate courses was partly relieved by the disposition which had shown itself within a few years to enlarge such courses to the full complement of three hours. This had already been done in several instances by instructors who felt that they could not gain a satisfactory hold on the attention and interest of their pupils when they met them only twice a week. The success of the experiment in these cases and the adoption of the new classification combined to give new impulse to the movement, and nine more two-hour courses were now enlarged in the same way. In other instances a consolidation was effected of cognate courses. Of the old two-hour courses not disposed of in either of these ways, three, with some increase of the work required, were classed as full courses, and four, in which the work is lighter, as half-courses. In one instance a half-course was arranged with three exercises a fortnight.

The difficulties attending the transition from the old method were thus successfully overcome. In the application of the new system to new courses no serious difficulty is anticipated. The great majority of courses, it is expected, will have three exercises a week; but in some studies of an advanced character, which are not likely to be undertaken by any but the most capable and industrious students, two meetings a week with the instructor, or even in exceptional cases only one meeting, may be deemed sufficient. On the other hand, the system of half-courses provides a place for such studies as do not cover enough ground to fill out a complete course, and for those which, like Greek and Latin Composition, it is desirable that a student should pursue to a limited extent only, to supplement his study in other courses in the same department.

The changes introduced into the scheme of elective studies, due largely to the adoption of the two measures described above, but partly also to other causes, were numerous and important. The courses designated in the foregoing table as Greek 3, Latin 4, Philosophy 1 and 2, Fine Arts 1 and 5, Mathematics 2, Physics 1, and Natural History 2 were enlarged to three-hour courses; and Greek 11 was enlarged by the addition of one lecture a fortnight. The first two courses in Greek, the two introductory courses in Mediaeval and Modern History, the course in Early English with the graduate course in Beówolf, the first and fourth courses in Music, and the courses in Advanced Analytic Geometry and in the Theory of Equations, were consolidated to form in each case a single full course. The graduate courses in Classical Philology were divided between the Greek and Latin lists, with the exception of the course in Greek and Latin Comparative Philology and the Practice course in Text Criticism and Interpretation, which were placed by themselves under a new head, "Greek and Latin." A course by Professor Allen on the critical study of Homer takes the place of his course on the Mythology of the Greeks and Romans. Professor Allen also takes charge of the course in Practice in speaking Latin, now reduced to one hour a week. In German, composition is to be taught in the first course, which will be conducted by Mr. Lutz, and the separate course in composition, together with the course in Scientific German, is abolished; on the other hand a new course in German classics is established, to be conducted by Professor Cook. In French the course in translation and reading at sight is reduced to two hours a week, and will be conducted by Professor Bôcher; and the course in old French and Provençal is discontinued. Two new half-courses in Philosophy, each consisting of one lecture a week by Professor F. G. Peabody, have been established, — one on the Philosophy of Religion, the other on Ethics in its Relation to Religion. In History, the subject of Professor Emerton's course is changed from the Revival of Learning and the Reformation, to the Protestant Reformation and the Roman Catholic Reaction. The graduate course in Roman Law has been discontinued. In Mathematics an advanced course has been established on Arbitrary Functions and the Theory of the Potential, to be conducted by Professor Byerly and Dr. B. O. Peirce; and the course on Elliptic Functions has been omitted from the list. The most marked increase in the amount of instruction offered has been made in the department of Semitic Languages by the accession of Professor Lyon to the Faculty. The elementary course in Hebrew has been transferred to Professor Lyon, Professor Toy retaining the advanced course in Hebrew and the course in Arabic. The course in Old Testament Isagogics and Antiquities has been discontinued, and the following new courses established: a course in Aramaic, Classical and Jewish, once a week, by Professor Toy; a course in Assyrian, twice a week, by Professor Lyon; and three half-courses, each consisting of one lecture a week, on Quotations from the Old Testament in the New Testament, by Professor Toy, on the Criticism of the Pentateuch, by Professor Toy, and on Babylonian-Assyrian Antiquities, with special reference to Hebrew History, by Professor Lyon. In the foregoing statement temporary omissions of courses and transfers of instructors, owing to the absence of Professors Dunbar, Goodwin, Greenough, and James for the present year, have been passed over in silence, as not permanently affecting the character of the scheme.

The programme of elective courses for the present year, as finally arranged, contains one hundred and thirteen full courses and twenty-six half-courses. The total amount of instruction offered is three hundred and fifty-one and a half hours a week. The number of hours per week of instruction in each department, compared with the number offered in previous years, is as follows: —

Number of exercises per week in elective courses offered in	1871-72	1872-73	1873-74	1874-75	1875-76	1876-77	1877-78	1878-79	1879-80	1880-81	1881-82	1882-83
Semitic Languages .	..	3	3	3	3	3	3	4	4	11	8	13
Sanskrit and Zend .	..	3	3	6	3	3	3	6	6	11	10	10
Greek	24	25	22	23	25	23	23	24	26	29	25	25½
Latin	10	15	15	15	19	20	18	22	18	22	26	23
Greek and Latin . .	..	..	..	..	3	3	2	2	3	3	8	3
English	6	8	8	5	8	11	14	15	16	16	16	15
German	9	8	8	11	14	17	19	24	25	22	23	23
French	14	14	14	18	12	15	15	15	15	14	18	14
Italian and Spanish	11	11	11	14	17	17	17	19	20	20	20	18
Philosophy . . .	12	12	12	9	9	12	12	18	23*	24	17	21
Ethics	3	3	3	3	3	3	3	3	3	3	3	3
Political Economy .	3	3	3	6	6	6	6	6	9	9	7	7
History	15	17	17	20	20	23	23	25	25*	30	35	35
Roman Law . . .	..	3	..	3	3	3	3	3	4	4	5	4
Music	3	5	8	11	14	11	12	13	13	15	14	14
Fine Arts	..	..	..	6	9	4	6	9	8	6	8	11
Mathematics . . .	21	24	20	24	20	23	24	28	30	26	26	24
Physics	12	12	12	14	15	15	17	22	21	19	19	20
Chemistry . . .	11	11	14	14	14	18	18	21	26	26	23	23
Natural History . .	14	20	23	23	23	25	24	30	42	46	36	45
Aggregate . .	168	197	196	228	240	255	262	308	337	356	347	351½

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* Elective courses amounting to four hours a week in Philosophy and six hours in History were established in 1878 to take the place of the prescribed work in those subjects, which was abolished at that time. They formed no actual increase in the amount of instruction given.

The recent enlargement of the instruction in Semitic Languages and in Sanskrit and Zend has now enabled the Faculty to provide Honors for an extended course of study in each of those departments. Honors have also been established in Political Science, the necessary courses of study being made up from the departments of Political Economy, History, and Roman Law.

In 1876 the Faculty began in a cautious way to admit to the elective courses persons who had not had the advantage of a regular preparation for college and were past the age when such preparation was possible or expedient for them, but who, nevertheless, were sufficiently trained in special lines of study to pursue with profit the courses of instruction in certain departments. The restrictions originally placed on the admission of this class of persons, who were known as unmatriculated students, have been gradually removed, until now all the courses of study in the College are open to any person of good moral character who satisfies the Faculty of his fitness to pursue the particular courses he elects. The number of such students has never been large; last year there were thirty-four, and forty-five are in attendance this year. Their character has been various. Many have made excellent use of the opportunities offered, some for purposes of special study, others to supplement an imperfect or irregular training by such studies as would enable them to gain admission to one of the higher college classes. On the other hand, some have undoubtedly taken advantage of this means of securing a connection with the University, who have come with no serious purposes of study. In order to improve the condition of the former and either exclude the latter or place them under better control, the Faculty last year took steps to define more carefully the relation of this class of students to the College, and established regulations which, while subjecting them to stricter discipline, considerably enlarged their privileges. They are to be known henceforth as Special Students; they are members of the College from the time of their admission, and subject to the College regulations, the Faculty reserving the right to deprive any one of his privileges who abuses or fails to use them. In their studies they are substantially on an equal footing with undergraduates in all respects except that they are not candidates for any degree. But no inducements are held out to enter the College in this way except to persons of ability and diligence.

No certificate is given to a special student for any course of study unless he has attained seventy-five per cent of the maximum mark in that course. On the other hand, any special student who has attained an average of seventy-five per cent in twelve elective courses — that is, in an amount equivalent to the whole elective work required of an undergraduate — will receive a certificate to that effect on Commencement Day, and have his name printed on the Commencement programme; and a Special Student may compete for Honors on the same terms as an undergraduate.

Another subject to which the Faculty gave much attention last year was the anticipation of Freshman studies. For a number of years past a candidate for admission has been permitted to present himself for examination, at the beginning of the Freshman year, on the prescribed work in Greek, Latin, Mathematics, Physics, French, or German, and if successful to take advanced studies in his Freshman year in place of those anticipated. This provision has been made use of every year by a small number of students who have had time and opportunity before coming to College to pursue their studies beyond the mere requirements for admission, and who by this means were enabled to cover a wider range of subjects in their college course, or to carry their studies farther in any special department which their taste led them to prefer. But a student who anticipated Freshman studies was not at all advanced thereby towards the attainment of his degree. The elective studies taken in place of those anticipated were counted in their stead as part of his Freshman work, and he entered his Sophomore year under the same conditions as his classmates.

The deliberations of the Faculty last year resulted in the conclusion that the time had come for a change of policy in this matter. The old rule was adopted at a time when the elective courses had not yet thrown off the restraints to which they had been subject as prescribed studies, when their scope was comparatively limited, and to exempt a student from a part of the work of his class was to give him less than adequate employment for his time, and to expose him to the temptations of idleness. The conditions under which a student now pursues his studies are far different. The elective system in its present state provides a large number of courses on which the time that may be spent by a student is practically unlimited; and it is no uncommon thing for the most industrious students to devote themselves almost wholly to two or three studies in which they are especially interested, gaining the time for this by taking one or two easy courses to eke out their stint, and expending on these no more effort than is necessary to secure a high mark. The imposition of a uniform requirement for each year, however necessary in general, is a useless restraint in cases like these, and diverts a certain amount of effort from earnest and fruitful study to work of greatly inferior value. Under these circumstances it seems desirable not only to encourage students of the better class to anticipate a part of the work of the Freshman year, but to permit them to use the time thus gained for more extended study, if they so desire, in particular courses. The rule adopted by the Faculty provides that when a student, besides passing a creditable examination for admission, has passed with credit on any of the studies of the Freshman year, the work required of him in his college course shall be reduced by the amount anticipated; the reduction to be distributed among the four years at his own option, provided that it shall not in any year exceed the amount of one full course of study.

On the other branch of this subject, — the question of shortening the term of residence ordinarily required for the degree, — the Faculty proceeded more cautiously. They published a rule, that if a student has anticipated Freshman studies having an aggregate of nine hours a week of recitations and lectures, he may be admitted at once to the Sophomore class, on condition of performing the remaining work of the Freshman year — represented by about seven exercises a week — in the ensuing three years; but in this they have simply formulated the existing practice in the admission of candidates to the Sophomore class. They have, however, further announced that if a student who has anticipated Freshman studies amounting to less than nine hours, but still a substantial portion of the year's work, should desire to fulfil the requirements for the degree in three years, he may apply for leave to do so. The Faculty reserve their decision on applications of this kind until the circumstances of each case shall be known; but the announcement that such applications will be considered is an important step, and the response of future candidates to the suggestion thus thrown out will be awaited with interest.

CLEMENT L. SMITH, *Dean.*

December 1, 1882.

To the President of the University: —

Sir, — I have the honor to submit the following Report on the state of the Graduate Department during the academic year 1881–82: —

Forty-two courses of instruction, arranged with special reference to graduates, were offered this year, under the heading of Graduate Courses, and by vote of the Academic Council. The number of these courses actually given was thirty-one, and the accompanying table shows the numbers and status of the persons in attendance upon them.

Instruction was also given by Professor Whitney, in Geology and Lithology, to two candidates for higher degrees.

A course in Zend given by Professor Lanman, in the year 1880–81, was accidentally left unnoticed in my last annual report.

On the 21st of December, 1881, the Council voted, at the suggestion of the College Faculty, to discontinue the separation between graduate and undergraduate courses. Thus the University has returned to the system which existed before 1877–78, of presenting only one list of studies for graduates and undergraduates alike. The separation between the two classes of studies has had a valuable influence in drawing attention to the courses offered to advanced students, and also in stimulating the interest of the academic boards in these courses, and increasing their number and variety. But now that this service has been accomplished, it seems unadvisable to keep up a distinction which rests on no clear principle. In practice, the so-called graduate courses have been largely taken by undergraduates; while graduates have often found in the College list the instruction which it was most desirable for them to follow. A sharp line of division cannot now be drawn between graduate students and seniors, any more than between the successive undergraduate classes.

Six persons were admitted this year to candidacy for the degree of A.M.; and the whole number of candidates for the degree was ten, of whom four withdrew, either in the course, or after the expiration, of the year. Five received the degree, and one still continues his candidacy.

Fourteen persons were admitted to candidacy for the degree of Ph.D.; and the whole number of candidates for that degree was

Courses.	Teachers.	Subjects.	Hours per Week.	Students.	Total No. of Students.
Semitic Languages *a*.	Prof. Toy	Hebrew Grammar. Parts of Genesis, Judges, and Psalms. Written exercises	3	2 Se., 10 Di.	12
" " *b*.	Prof Toy	Hebrew Syntax. Lectures on Old Testament text-criticism. Amos, Ecclesiastes, and parts of Kings, Daniel, Job, Psalms, and the Targums. Essays by Students	2	6 Di.	6
Sanskrit *a*.	Prof. Lanman	Sanskrit Grammar. Selections from the Laws of Manu, the Veda, the Brahmanas, and the Sûtras	3	2 Se.	2
" *b*.	Prof. Lanman	Hymns of the Rigveda. The book Pâushya of the Mahâ-bhârata. The entire drama, Kâlidâsa's Sakuntalâ	2	1 Gr.	1
Classical Philology *b*.	Prof. Goodwin	Plato (Theaetetus). Aristotle (Politics, three books; and Metaphysics, one book). Zeller's History of Greek Philosophy, Vols. I. and II.	2	2 Se., 6 Gr.	8
" " *c*.	Prof. Sophocles	Pindar	2	2 Gr.	2
" " *d*.	Prof. Lane	Quintilian (Book I.). Allen's Early Latin Remnants. Gellius (Selections). Theses	2	2 Se., 9 Gr.	11
" " *e*.	Prof. Allen	Lectures on the History of the Roman Drama; Structure of Plays; Scenic Antiquities; Metres. One play of Plautus, and fragments of chief tragic and comic poets	2	1 Se., 4 Gr.	5
" " *g*.	Prof. Allen	Lectures on Greek and Roman Religion and Religious Institutions	2	3 Se., 3 Gr.	6
" " *h*.	Prof'rs. Allen and Smith	Practice in Text-criticism and Interpretation. — Aristophanes (Knights); Propertius — Discussion of theses on philological subjects.	2	1 Se., 10 Gr.	11
Modern Languages *a*.	Prof. Child	Beowulf	1	3 Se.	3
" " *b*.	Mr. Sheldon	Sievers's Grundzüge der Phonetik. Heyne's Ulfilas. Written work in Phonetics and Gothic, Braune's Althochdeutsches Lesebuch begun	2	3 Se.	3
" " *c*.	Mr. Sheldon	Hartmann von Aue (Der arme Heinrich and some of the Lieder.) Das Nibelungenlied. Walther v. d. Vogelweide (Selections.) Written work	3	2 Se., 1 Ju., 1 Fr., 1 Sp.	5
" " *d*.	Mr. Bendelari	Old French and Provençal	3	1 Se., 1 Ju.	2
Philosophy *b*.	Prof. James	Advanced Psychology. (Course discontinued in March)	2	2 Gr., 2 Med.	4
Political Economy *a*.	Prof. Dunbar	Public Finance	1	4 Se., 5 Gr.	9
History *b*.	Prof. Torrey	Elements of Public International Law; History of Modern Treaties	3	7 Se., 1 Ju., 1 Gr., 1 Law	10
" *c*.	Prof. Torrey	Forms of Government and Political Constitutions (particularly in Continental Europe) since 1789	2	7 Se.	7
" *d*.	Dr. Young	Legal Institutions of the Franks and Anglo-Saxons	3	3 Se.	3
" *e*.	Prof. Everett	Studies in the Comparative History of Religions	2	2 Gr. 10 Di.	12
Music *a*.	Prof. Paine	Canon and Fugue (study and composition)	2	6 Se.	6
" *b*.	Prof. Paine	Instrumental Music (Rondos, Nocturnes, Sonatas, and other free forms)	3	7 Se.	7
Mathematics *a*.	Prof. Peirce	Gauss's Theoria Motus, Book I.	1	1 Sci.	1
Physics *a*.	Prof. Trowbridge	Experimental Physics, with Laboratory work	3	1 Se.	1
" *b*.	Prof. Trowbridge	Maxwell's Electricity and Magnetism	3	2 Se., 2 Sci.	4
Chemistry *a*.	Prof. Storer	Agricultural Chemistry	2	2 Bussey	2
Natural History *a*.	Dr. Mark	Embryology, with Laboratory work. (Attended for a part of the year by six students)	1	1 Gr., 2 Sci.	3
" " *e*.	Prof. Farlow	Anatomy and Development of Higher Cryptogams	3*	1 Gr.	1
" " *f*.	Prof. Farlow	Anatomy and Development of Fungi and Algae	3†	1 Gr.	1
" " *g*.	Prof. Slade	Anatomy and Histology of Domestic Animals, with exercises in Dissection ‡	4	4 Sp.	4

* First half year. † Second half year. ‡ From November 1, to May 1.

twenty-eight, of whom three have withdrawn, or suffered their candidacy to lapse, and twenty-five are still candidates. Two of these twenty-five candidates were admitted to the degree of A.M. at the last Commencement.

One person was admitted to candidacy for the degree of S.D.; and the number of candidates for that degree was five, of whom one attained the degree, and four are still candidates.

The names of those members of the Graduate Department who received degrees at Commencement, 1882, are as follows: —

A.M.

Le Baron Russell Briggs, A.B., 1875.
Edward Southworth Hawes, A.B., 1880.
John Norton Johnson, A.B., 1881.
Charles Henry Morss, A.B., 1880.
Charles Robert Sanger, A.B., 1881.
Frank Webster Smith, A.B., 1877.
Edmund Allen Whitman, A.B., 1881.

S.D.

LEONARD PARKER KINNICUTT, S.B. (*Mass. Inst. Technol.*), 1875.

Department, Physics. *Subject*, Chemistry. *Thesis*, "The Formation of Phenylglyceric Acid from Cinnamic Acid Bibromide."

The Parker Fellowships were held by

Joseph Silas Diller, S.B, 1879,
Frank Hugh Foster, A.B., 1873,
Washington Irving Stringham, A.B., 1877,
(Ph.D. *Johns Hopkins Univ.*), 1880,
George Lincoln Walton, A.B., 1875, M.D. 1880;

and the Kirkland Fellowship by

Paul Shorey, A.B., 1878.

Mr. Foster resigned his fellowship at the end of the academic year, after having been nominated for reappointment. All the other incumbents were reappointed; and

Edward Emerson Phillips, A.B., 1878, Ph.D., 1880,

was appointed to a Parker Fellowship, for the year 1882–83, in place of Mr. Foster.

After the close of the academic year, Dr. Stringham resigned his fellowship, in consequence of his accepting an appointment to the principal Professorship of Mathematics in the University of California. He had held his fellowship for two years, during which he had carried on important studies at the University of

Leipzig. He was most desirous to defer entering on his new professorship, so as to complete his plan of work by remaining abroad another year; but he found it impossible to effect this arrangement.

Frank Nelson Cole, A.B. 1882, has been appointed to a Parker Fellowship, for the year 1882–83, in place of Dr. Stringham.

A new fellowship was instituted in the course of the year by the gift of friends of the University, to be named the "James Walker Fellowship," in memory of the late President Walker, and to be given, by preference, to a student of those branches of Intellectual and Moral Philosophy to which Dr. Walker devoted his life. This fellowship was awarded for the year 1882–83 to

Benjamin Rand, A.B., 1879, A.M., 1880.

The prize offered by Mr. Robert Noxon Toppan (A.B., 1858), in the year 1879–80, for the best essay on some subject in political science, was awarded, at the close of this year, to

Frank William Taussig, A.B., 1879,

a candidate for the degree of Ph.D., for his essay on "Protection to Young Industries as applied in the United States."

The Academic Council voted, Oct. 21, 1881, to recommend to the Corporation and Overseers to alter section 5 of the Standing Rules relating to the degrees of A.M., Ph.D., and S.D., so as to make it read as follows: —

"5. The Academic Council will recommend for the degree of Master of Arts candidates otherwise properly qualified, who, after taking the Bachelor's degree, shall pursue for at least one year at the University a course of liberal study approved by the Council, and shall pass with high credit an examination on that course. The Council will designate from time to time those courses of instruction in the Professional and Scientific Schools which will be accepted for the degree of A.M."

The Council also voted to recommend the repeal of section 6 of the Standing Rules.

These recommendations were adopted by the Corporation and Overseers, with a slight verbal alteration.

JAMES MILLS PEIRCE, *Secretary of the Academic Council.*

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — As Dean of the Theological Faculty, I respectfully submit the following Report for the academic year 1881–82: —

Thirty-two students were connected with the School during the year, as follows: —

Resident Graduates	4
Senior Class	5
Middle Class	4
Junior Class	8
Special Students	11

Of these, two resident graduates and one member of the middle class left early in the year, so that the number of students was practically twenty-nine. Three undergraduates recited in Hebrew, two candidates for the degree of A.M. attended the lectures on Comparative Religion, and one those on Systematic Theology.

The nature and amount of the work of the School may be learned from the accompanying table, pp. 82, 83.

The theological instruction of the School was this year supplemented by a course of twelve lectures by Alexander McKenzie, D.D., on the Theology of the New Testament. These lectures were not only valuable in themselves, but were important as presenting the subjects treated from a point of view different from that occupied in the regular course on Systematic Theology. They may serve to illustrate the plan of the School by showing the breadth of instruction which it would gladly give if it were able. Meanwhile, such a course given every year, by representatives of different types of Theology, cannot fail to be instructive and stimulating to the students who attend them.

I express with pleasure the indebtedness of the School to Joseph Henry Allen, A.M., who for four years has filled the position of lecturer on Ecclesiastical History. During this time he identified himself with the School, giving to it the full advantage of his varied learning, his industry, and his enthusiasm.

The year has been marked by the addition to the School of two professors — one filling the recently established Winn Professorship of Ecclesiastical History, and the other, the Hollis Professorship of Divinity, which had been so long vacant. Ephraim Emerton, Ph.D., who has been called to the former position, had already, as instructor in the College, shown himself to be a successful student and teacher in a field of study in part identical with that to which he is now to devote himself.

It would be impossible for any one teacher in these days to perform properly all the duties which were originally assigned to the Hollis Professor. Happily this very breadth of range, which requires a selection from among the functions prescribed, makes it possible, at any time, to use this professorship in such a way as to meet the special needs or opportunities of the School. It has thus, fortunately, been able to secure the services of David Gordon Lyon, Ph.D., who has already distinguished himself as a student of Assyriology. The introduction of this study makes the Semitic department of the University especially strong, and supplies to the students of Theology instruction which late investigations have shown to be very important for the comprehension of the Old Testament. Professor Lyon, also, by taking the Junior class in Hebrew, leaves Professor Toy free to give more lectures on the questions which make the study of the Old Testament so interesting and important at the present day.

The connection of Professors Toy and Lyon with the School may illustrate still further the wisdom and the feasibility of the idea which it represents, by which the range of its possible selection of teachers is made so much larger than that within which most seminaries of Theology are confined.

A new lecture room was constructed in Divinity Hall last summer. This addition was made necessary by the greater number of teachers to be accommodated, and by the fact that most of the lectures are now given early in the day.

It gives me pleasure to record an important change in the requirements for entering the School. Henceforth only graduates of some college, or persons who give evidence of an education equal to that of a college graduate, will be admitted to candidacy for the degree of B.D., while an examination similar to that before required for becoming a candidate for the degree must be passed in order to enter the School as a special student. It is expected that some loss in the number of students may attend the change, but it is believed that this loss will be more than balanced by a greater-uniformity of attainment among the students, which will make the teaching of the School more effective. It was felt, also, that it should be the aim of the School to elevate the standard of education in the ministry.

Instructor.	Subjects and Methods of Study.	Number of Students.	Exercises per Week.
	JUNIOR CLASS.		
Prof. Abbot.	New Testament; Textual Criticism of the New Testament; Exegesis of Gospel of Matthew, chapters i.–xiii. Lectures and Recitations. Dissertations by students.	12	2
Prof. Toy.	Hebrew Forms in Davidson's Grammar with written translations from English into Hebrew and from Hebrew into English. Portions of Genesis, Judges, Ezekiel, and Psalms read. Lectures on the Ethics of the Old Testament.	15	3
Prof. Peabody.	Homiletics; Structure and Analysis of Sermons. Lectures.	15	1
Prof. Peabody.	Philosophy of Religion; Lectures.	18	1
Mr. Allen.	Ecclesiastical History, First Period, to end of eighth century; Lectures, with discussions, and constant reference to original authorities.	10	2
Mr. Ticknor.	Elocution. Class exercises.		
	MIDDLE CLASS.		
Prof. Abbot.	New Testament; Exegesis of the Gospel of Matthew, chapters xiv.–xxviii., Critical Introduction to Gospel of John and Exegesis of chapters i.–iv.	6	2
Prof. Everett.	Comparative Religion; Studies of Vedic, Avestan, Buddhist, and Chinese Religions; with constant reference to translations and other works reserved for the use of students.	12	2
Prof. Everett.	Systematic Theology begun; Elements of Religion.	6	1
Prof. Toy.	Biblical Aramaic; Forms in Riggs's Grammar, and Hebrew Syntax in Gesenius. Reading from Daniel, Ezra, the Targums, Amos, Job, and Ecclesiastes. Lectures on Textual Criticism with examination of the text of 1 Samuel.	5	2
Prof. Peabody.	Homiletics; Sermons preached by the students before the two upper classes and criticised by students and teacher.	15	2

MIDDLE CLASS — CONTINUED.

Prof. Peabody.	Ethics; Lectures, Discussions, and Essays.	9	1
Mr. Allen.	Ecclesiastical History, Second Period, from ninth to fifteenth century inclusive. Chief authorities, Milman's Latin Christianity and Greenwood's Cathedra Petri. The students were also referred to other sources. — Lectures, Discussions, and Essays.	5	2
Mr. Ticknor.	Elocution. Each student thirty minutes a week.		

SENIOR CLASS.

Prof. Abbot.	New Testament; Exegesis of John iii.-xxi.; Critical Introduction to the Epistle to the Romans, and Exegesis of chapters i.-iv.	7	2
Prof. Everett.	Systematic Theology; Lectures and Essays.	7	3
Prof. Toy.	Old Testament; Lectures on the Formation of the Canon. Reading of Ewald's "Antiquities of Israel."	6	1
Prof. Peabody.	Homiletics, as in middle year.		
Prof. Peabody.	Pastoral Care; twelve Lectures, open to all students.	24	
Mr. Allen.	Ecclesiastical History, Third Period, from beginning of sixteenth century to the present time; Lectures and Discussions.	6	2
Mr. Ticknor.	Elocution. Each student forty-five minutes a week.		

LECTURES TO THE SCHOOL.

Prof. Toy.	The Messianic Thought of the Old Testament.	Twenty Lectures.
Mr. Allen.	The History of Modern Liberalism in Theology, forming part of the course to the Seniors but open to all students.	Twelve Lectures.
Mr. McKenzie.	The Theology of the New Testament.	Twelve Lectures.

GENERAL EXERCISES.

Preaching by some student every Friday evening, open to the public; the sermon submitted in advance to the teacher of Homiletics.
Extempore speaking once in two weeks; with criticism.
Conference meeting, conducted by students, the Faculty being present and taking part, once in two weeks (alternating with the above).
Morning prayers, conducted by students and teachers.

The School has been fortunate in retaining for a third year as Librarian C. J. Staples, B.D., to whose services I made reference last year. Ninety-eight books were added to the Library during the year. Forty-six volumes of a miscellaneous nature were transferred to Gore Hall. In all, one thousand and thirty-seven volumes have been thus transferred. There now remain in the Divinity Library only works relating to the study of Theology. The preparation of the card catalogue has been advanced, and that of a subject catalogue, including references to important articles in the periodicals received, has been begun. The circulation of the year, exclusive of text-books, has been twelve hundred and ten. The Librarian urges the importance of preserving in the Library pamphlets relating to the theological questions of the day. Many of these, which may now seem of small value, will in the future be of great importance, as illustrating the thought and temper of the time. Arrangements have been made for cataloguing pamphlets that may be received.

C. C. EVERETT, *Dean*.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I beg to submit the following Report upon the Law School for the academic year 1881–82: —

The table on pp. 86, 87 gives the courses of study and instruction during the year, the names of the instructors, the text-books used, the number of exercises per week in each course, and the number of students who offered themselves for examination in each course at the end of the year.

The following table exhibits the attendance at the School during the last twelve years: —

	1870–71.	1871–72.	1872–73.	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.
Whole number of students in the School	165	138	117	141	144	173	199	196	169	177	161	161
Number that were in the School during the whole year	107	107	109	121	130	153	168	172	137	138	136	139
Number that were in the School only part of the year	58	31	8	20	14	20	31	24	32	39	25	22
Average number	136	123	113	131	137	163	184	183	154	157	149	146

The following table exhibits the School as divided into classes since the establishment of the three years' course and the examination for admission : —

	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.
First Year	72	63	78	57	61
Second Year . . .	79	50	32	58	41
Third Year. . . .	—	—	21	14	25
Special Students. .	31	47	46	32	34

In regard to the foregoing table, it is to be observed that, although the three years' course went into operation at the beginning of 1877–78, there was no third-year class until 1879–80. It is also to be observed that the second-year class of 1877–78 did not take the three years' course, but was graduated at the end of the second year, that class having entered the School before the three years' course went into operation.

The following table exhibits the results of the examinations for admission in each year since they were established : —

	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.
Offered	16	15	18	25	19
Admitted . . .	7	7	12	13	16

The following table exhibits the results of the examinations for a degree in each year since the establishment of the three years' course : —

	1877-78.			1878-79.			1879-80.			1880-81.			1881-82.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year .	66	51	15	50	42	8	73	69	4	45	43	2	49	44	5
Second Year	66	47	19	40	39	1	28	26	2	49	46	3	38	37	1
Third Year .							22	18	4	18	18	0	36	33	3

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
	FIRST YEAR.		
Prof. Gray.	Real Property. No text-book.	2	48
Prof. Langdell.	Contracts. Langdell's Cases on Contracts.	3	56
Mr. Howland.	Torts. Ames's Cases on Torts.	3	49
Prof. Thayer.	Criminal Law and Criminal Procedure. No text-book.	1	49
Prof. Ames.	Civil Procedure at Common Law. Ames's Cases on Pleading.	1	48
	SECOND YEAR.		
	Honor Course.		
Prof. Thayer.	Evidence. No text-book.	2	27
Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading.	2	27
Prof. Gray.	Property. No text-book.	2	27
Prof. Ames.	Trusts and Mortgages. Ames's Cases on Trusts.	2	27
	Ordinary Course.		
	Elective Subjects.		
Prof. Thayer.	Evidence. No text-book.	2	19
Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading.	2	4
Prof. Gray.	Property. No text-book.	2	18
Prof. Ames.	Trusts and Mortgages. Ames's Cases on Trusts.	2	10
Prof. Thayer.	Sales of Personal Property. Langdell's Cases on Sales.	2	8
Prof. Ames.	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.	2	6

THIRD YEAR.

HONOR COURSE.

Required Subjects.

Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction.	1	13
Prof. Ames.	Partnership and Corporations. Ames's Cases on Partnership.	2	13

Elective Subjects.

Prof. Thayer.	Sales of Personal Property. Langdell's Cases on Sales.	2	13
Prof. Ames.	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.	2	11
Prof. Gray.	Conflict of Laws. No text-book.	1*	4
Prof. Thayer.	Constitutional Law. No text-book.	1†	4
Prof. Thayer.	Agency and Carriers. No text-book.	1	10
Prof. Gray.	Wills and Administration. No text-book.	1	9
Prof. Gray.	Jurisprudence. Austin on Jurisprudence.	1	7

ORDINARY COURSE.

Elective Subjects.

Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction.	1	6
Prof. Ames.	Partnership and Corporations. Ames's Cases on Partnership.	2	19
Prof. Thayer.	Sales of Personal Property. Langdell's Cases on Sales.	2	17
Prof. Ames.	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.	2	17
Prof. Gray.	Conflict of Laws. No text-book.	1*	2
Prof. Thayer.	Constitutional Law. No text-book.	1†	2
Prof. Thayer.	Agency and Carriers. No text-book.	1	12
Prof. Gray.	Wills and Administration. No text-book.	1	15
Prof. Gray.	Jurisprudence. Austin on Jurisprudence.	1	6
Prof. Ames.	Trusts and Mortgages. Ames's Cases on Trusts.	2	1
Prof. Langdell.	Jurisdiction and Procedure in Equity (2d year). Langdell's Cases in Equity Pleading.	2	2

* For the first half of the year.

† For the last half of the year.

In regard to the foregoing table, it is to be observed that it includes no special students, and hence that all the applicants included in it were either graduates of colleges, or had passed the examination for admission. Of course this remark does not apply to the second-year class of 1877–78, and this accounts in part for the much greater number of failures in that class.

The following table exhibits the number of students who, since the establishment of the three years' course, have been examined for a degree in the studies of any year without having been members of the School during that year: —

	1877–78.			1878–79.			1879–80.			1880–81.			1881–82.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year . .	5	2	3	3	2	1	6	4	2	6	4	2	2	1	1
Second Year .							1	1	0						
Third Year .							5	4	1	4	4	0	10	8	2

The following table exhibits the results of the examinations for the honor degree in each year since it was established: —

	1878–79.			1879–80.			1880–81.			1881–82.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
Second Year .	26	12	14	17	7	10	39	16	23	27	11	16
Third Year .				9	7	2	5	3	2	13	10	3

The following table exhibits the number of students who have entered the School in each year during the last twelve years, and shows how many of them were graduates of colleges, and, of the latter, how many were graduates of Harvard and how many of other colleges.

	1870–71.	1871–72.	1872–73.	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.
Whole number of entries	105	92	87	95	102	119	128	111	102	124	91	97
Graduates of colleges	60	56	47	58	55	67	77	79	62	76	60	53
Harvard graduates .	19	26	22	29	40	39	47	47	38	59	41	29
Graduates of other colleges	41	30	25	29	15	28	30	32	24	17	19	24
Non-graduates . . .	45	36	40	37	47	52	51	32	40	48	31	44

C. C. LANGDELL, *Dean.*

To the President of the University:

Sir, — As Dean of the Medical Faculty, I submit the following Report upon the Medical School for the academic year 1881–82:

The whole number of students in attendance during the year was two hundred and fifty; during the first term two hundred and forty-six; during the second two hundred and thirty-five. Of these, one hundred and twenty-eight had a literary or scientific degree. There were ninety-five applicants for the degree of Doctor of Medicine, of whom eighteen were rejected. Seventy-seven passed the examination and received their degrees. The Barringer Scholarships were awarded to Henry Fiske Adams and Henry Austin Wood of the Fourth Class. The other Scholarships were awarded to John Abbott Crosby and Alton Atwell Jackson of the Third Class, and Oscar Joseph Pfeiffer and Leonard Wood of the Second Class.

The Fourth Class was composed of ten students, of whom nine passed the examination, five of these *cum laude ;* three received hospital appointments; one took the ordinary degree of M.D.; one postponed graduation to become a candidate for a hospital.

The remarks made in the last Report with regard to the fourth year might be repeated in this. It is still too early to determine the results of this additional effort to improve medical education. We can only say that, if expressed intention of prolonging the term of study be an index of progress, progress has been made. The chief difficulty still remains: we are in competition with the hospitals, which claim an important number of the best students, before they have completed a proper course of study.

COURSES OF INSTRUCTION FOR 1881–82.

Instructors.	Subjects.	Exercises per Week.
	FIRST CLASS.	
Prof. Holmes	Descriptive Anatomy	Four till May.
Drs. Beach, Waterman, M. H. Richardson, and Otis	Practical Anatomy, with Exercises in Dissection	Fifteen, January till May.
Drs. Dwight & Quincy	Laboratory Exercises in Histology	Two till May.
Dr. C. S. Minot	Embryology	Twelve Lectures.
Prof. Bowditch	Systematic and Experimental Physiology	Four.
Dr. J. W. Warren	Laboratory Exercises in Experimental Physiology	November till May.
Dr. Hills	General and Analytical Chemistry	Two, with ten additional exercises.
Dr. Hills	Practical Exercises in the Laboratory for General Chemistry	Six.
	SECOND CLASS.	
Dr. Dwight	Topographical Anatomy	One.
Drs. Beach, Waterman, M. H. Richardson, & Otis	Practical Anatomy, with Exercises in Dissection	Five till May.
Prof. Wood	Medical and Toxicological Chemistry	Two.
Prof. Wood & Dr. Emerson	Practical Exercises in the Laboratory for Medical Chemistry	Six.
Dr. Bolles	Materia Medica, with Practical Demonstrations	One.
Prof. Fitz	General Pathology and Pathological Anatomy	Two.
Prof. Fitz	Special Pathological Anatomy, with Demonstrations	Two.
Drs. Cutler & Whitney	Laboratory Exercises in Pathological Histology	Two till April.
Prof. Fitz & Dr. Cutler	Practical Instruction in performing Autopsies	Throughout the year.
Profs. Minot & Edes	Clinical Medicine	Four.
Drs Mason, Shattuck, & Garland	Practical Instruction in Auscultation and Percussion	Six first half-year.
Dr. Knight	Practical Diagnosis and Treatment of Diseases of the Larynx	Six first half-year.
Dr. Warren	Recitations in Surgical Pathology	One first half-year.
Dr. Warren	Recitations in Surgery	One second half-year.
Dr. Warren	The Application of Bandages and Apparatus	One second half-year.
Drs. Warren & W. S. Bigelow	Laboratory Exercises in Surgical Histology	Two after March.
Prof. Bigelow	Clinical Surgery	Two first half-year.
Prof. Cheever	Clinical Surgery	Two till April.
Dr. Porter	Clinical Surgery	Two second half-year.
	THIRD CLASS.	
Prof Edes	Therapeutics	Three.
Prof. Reynolds	Theory and Practice of Obstetrics	Three.
Dr. W. L. Richardson	Recitations in the Theory and Practice of Obstetrics	One.
Dr. W. L. Richardson	Operative Obstetrics	Twelve practical exercises.
Dr. W. L. Richardson	Practical Instruction in Clinical Obstetrics	Throughout the year.
Prof. Minot & Dr. Whittier	Theory and Practice of Physic	Five.
Profs. Minot & Edes	Clinical Medicine	Four.
Prof. Bigelow	Surgery and Clinical Surgery	Two first half-year.
Prof. Cheever	Clinical Surgery	Two till April.
Dr Porter	Surgical Anatomy and Operative Surgery	Fifteen practical exercises.
Drs. Porter & Otis	Operative Surgery	One.
Prof. Williams	Diseases of the Eye	
Prof. Williams	Clinical Ophthalmology	One till January and after March.
Prof. White	Diseases of the Skin	One.
Prof. White	Clinical Dermatology	One.
Dr. Baker	Gynaecology	Two.
Dr. Baker	Clinical Gynaecology	Two second half-year.
Dr. Davenport	Clinical Gynaecology	Two first half-year.
Dr. Greenough	Practical Diagnosis and Treatment of Syphilis	One.

COURSES OF INSTRUCTION. — CONTINUED.

Instructors.	Subjects.	Exercises per Week.
	THIRD CLASS. — CONTINUED.	
Dr. Green	Practical Diagnosis and Treatment of Diseases of the Ear	One, January till April.
Dr. Blake	Anatomy, Physiology, and Diseases of the Ear	Two for three months.
Dr. Oliver	Practical Diagnosis and Treatment of Diseases of Children	One first half-year.
Dr. Rotch	Practical Diagnosis and Treatment of Diseases of Children	One for six months.
Dr. Webber	Practical Diagnosis and Treatment of Diseases of the Nervous System	One till February.
Dr. Putnam	Practical Diagnosis and Treatment of Diseases of the Nervous System	One.
Dr. Folsom	Mental Diseases	Eight Lectures.
Dr. Draper	Forensic Medicine, with Demonstrations	Twelve Exercises.
	FOURTH CLASS.	
Dr. Draper	Clinical Medicine	One.
Dr. Garland	Clinical Medicine	One.
Dr. Mason	Clinical Medicine	One for three months.
Dr. Warren	Clinical Surgery	One, three in October.
Dr. Porter	Clinical Surgery	One after February.
Drs. Porter & W. S. Bigelow	Operative Surgery	Practical Exercises.
Dr. Bradford	Orthopedic Surgery	Two after March.
Prof. Reynolds	Obstetrics	One
Dr. W. L. Richardson	Clinical Obstetrics	Two for six months.
Dr. W. L. Richardson	Operative Obstetrics	Practical Exercises.
Prof. Williams	Clinical Ophthalmology	Two for six months.
Dr. Wadsworth	Ophthalmoscopy	One for four months.
Prof. White	Dermatology	One.
Prof. White	Clinical Dermatology	Three.
Drs Baker & Davenport	Clinical and Operative Gynaecology	Six.
Dr. Chadwick	Clinical Gynaecology	Three.
Drs. Oliver & Rotch	Diseases of Children	Three.
Drs. Webber & Putnam	Diseases of the Nervous System	Two.
Dr. Folsom	Mental Diseases	One.
Dr. Knight	Laryngology	Three for two months.
Dr. Blake	Otology	Two for three months.
Dr. Green	Otology	Two for three months.
Dr. Draper	Forensic Medicine	One.
Dr. Harris	Forensic Medicine	Demonstrations.
Dr. Greenough	Syphilis	Two.
Dr. Homans	Ovarian Tumors	Six lectures; Clinical Exercises.
Boston Cooking Sch'l	Cookery	Six Exercises.

The table on pages 90, 91 shows the amount and character of the instruction given. The results of the examinations for admission to the School are given in the following table: —

			Physics.	Latin.	English.	Elective.	Rejected.
1882.	June	Offered	21	22	21	21	3
		Conditioned	5	9	4	6	
	Sept.	Offered	23	22	22	19	0
		Conditioned	8	10	1	1	

In the following table will be found a statement of the rejections at the annual examinations in June for four years past.

JUNE EXAMINATIONS. — STATISTICS OF REJECTION.

		First Class.						Second Class.								Third Class.											
		Anatomy.		Physiology.		General Chemistry.		Medical Chemistry.		Materia Medica.		Path. Anatomy.		Topo. Anatomy.		Theory and Practice.		Clinical Medicine.		Surgery.		Clinical Surgery.		Therapeutics.		Obstetrics.	
			Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
1879	Passed	73		59		33		64		57		59				56		64		58		60		57		51	
	Rejected	15	17	36	37	36	52	11	14	17	22	11	15			0	0	1	1	3	4	1	1	11	16	9	15
	Total	88		95		69		75		74		70				56		65		61		61		68		60	
1880	Passed	77		81		52		46		70		62				58		53		65		59		56		56	
	Rejected	15	16	27	25	15	22	11	19	13	16	11	15			9	13	10	15	1	1	11	15	13	18	9	13
	Total	92		108		67		57		83		73				67		63		66		70		69		65	
1881	Passed	58		42		37		70		69		77				74		67		73		77		82		66	
	Rejected	8	12	19	31	10	21	9	11	15	17	11	12			5	6	16	19	3	3	1	1	8	8	14	17
	Total	66		61		47		79		84		88				79		83		76		78		90		80	
1882	Passed	60		62		38		64		46		54		52		74		82		82		80		64		69	
	Rejected	10	11	13	17	10	20	7	9	15	24	11	16	3	5	9	10	5	5	2	2	3	3	5	7	15	17
	Total	70		75		48		71		61		65		55		83		87		84		83		69		84	
		Fourth Class.																									
		Ophthalmology.		Dermatology.		Gynaecology.		Obstetrics.		Clinical & Operative Obs.		Diseases of Children.		Diseases of Nervous System.		Mental Diseases.		Forensic Medicine.		Otology.		Laryngology.		Syphilis.		Operative Surgery.	
1881	Passed	9		7		8				7		9		9		9		9		8		9		9		9	
	Rejected	0	0	2	22	1	11			2	22	0	0	0	0	0	0	0	0	1	11	0	0	0	0	0	0
	Total	9		9		9				9		9		9		9		9		9		9		9		9	
1882	Passed	7		7		7		6		6		7		6		6		7		8		7		7		8	
	Rejected	1	12	0	0	0	0	1	14	1	14	0	0	1	14	1	14	0	0	0	0	0	0	0	0	0	0
	Total	8		7		7		7		7		7		7		7		7		8		7		7		8	

owing table shows the increasing recognition of the f studying medicine where it can be taught: —

OF TERMS SPENT AT THE SCHOOL BY GRADUATES.

873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.
8	22	14 47%	25 69%	40 65%	41 85%	62 88%	39 86%	49 81%	79 91 %
3	2	7	5 13%	9	4	2 2%	1 2%	6 10%	2 2%
8	6	6	4 11%	8	3	3 4%	4 8%	4 6%	4 4
15	5	0	2 5%	1	0	2 2%	0	1 1%	0
7	3	3 10%	0	3	0	1 1%	1 2%	0	1 1%
41	38	30	36	61	48	70	45	60	86*

* Includes nine students of the Fourth Class.

now able to announce the approaching completion of uilding, which has for so many years been mentioned the great wants of the School. It will probably be occupancy in the spring.

CALVIN ELLIS, *Dean*.

PRESIDENT OF THE UNIVERSITY: —

I beg leave to submit my Report upon the Dental School ar 1881–82: —

nber of students was twenty-one, — eleven in the first-, nine in the second-year, and one in the third-year.

st-year students attended lectures with the Medical of the same year, and with them passed the same exam- Such as cannot pass two of the three examinations of are not allowed to go on with the class to the next dies, but must go over the work of the first year again. ilures there were four. The studies were General An- ysiology, and General Chemistry.

idents of the second and third year also attended as a eir course, in connection with the Medical Students, tures in Surgical Pathology, given by the Professor of urgery.

The Professor of Operative Dentistry has lectured one hour each week on the theory and methods of his specialty, and the Clinical Instructors, each taking in turn one afternoon, have given five afternoons a week throughout the year to practical teaching in this branch of dentistry. The instruction is given in the out-patients department of the Massachusetts General Hospital, which has furnished the usual surplus of patients, so that a choice of operations and a great variety of instruction have been possible. The demonstrator, with one of the instructors, is always present to superintend the operations in this infirmary, and to give such advice and assistance as may seem to be required. Occasional clinics have also been given.

The Professor of Mechanical Dentistry has given two hours of each week to lectures and clinical instruction in the laboratory. The demonstrator in this Department has been present every morning of five days in each week for instruction. In this, as in the Operative Department, patients have been sufficiently numerous to give all students abundant and varied opportunities for practice.

Drs. Virgil C. Pond and George F. Grant, the demonstrators respectively of Operative and of Mechanical Dentistry, have worked with eminent faithfulness and success.

Dr. Charles A. Brackett, Assistant Professor in Dental Therapeutics, has given twenty-seven hours of instruction in his course. He reports that he has kept up the system of devoting the first ten minutes of each hour to a "quiz" upon the prominent points of the preceding lecture, being satisfied that facts and principles become more firmly fixed by this procedure.

Dr. Charles S. Minot has devoted three consecutive hours of each week to instruction in Oral Surgery and Pathology, including the use of the microscope and the preparation of sections. He reports a more systematic instruction in the Laboratory, a special appropriation enabling him to add several valuable specimens to the collection, and four new microscopes and other important implements to the equipment. The students showed a marked improvement over previous years, confirming the belief in the utility of these exercises, for which a more complete and definite provision seems desirable. At the end of the year, to our great regret, stress of other duties compelled Dr. Minot's resignation.

Out of seven students examined, three attained their degree.

nation of the Professor of Operative Dentistry, from business, was handed in at the close of the year. Dr. s been connected with the School from its origin, first ; professor, and, since the resignation of Dr. Moffatt, , and has identified himself with the Operative Depart- loss enforces the pressing impecuniousness of the ch, for want of money, is unable to retain experienced can no longer afford to give the gratuitous service chool demands. With the exception of the Demon- ery instructor in the School gives his services, and its epends on their unselfish devotion. Already, in the rs of its existence, the School has lost from this cause ors, one adjunct professor, three instructors who filled and performed the work of professors, and numerous ructors. Further comment upon the pecuniary needs l seems unnecessary.

THOMAS H. CHANDLER, *Dean*.

ESIDENT OF THE UNIVERSITY:—

ve the honor to submit the following Report upon the cientific School for the academic year 1881–82:— ber of students registered during the year was thirty- were classified as follows:—

	1881–82.	1880–81.
gineering	6	4
emistry	0	0
tural History	6	5
thematics	1	1
ecial Courses	18	31
Total	31	41

e seen that there is a gain in Engineering and Natural nd a loss in special students. Represented by per- gineering gained fifty, Natural History twenty, and rses lost about forty-two.

st Report I suggested that the removal, by the College, triction of age, as regards unmatriculated students, rally diminish the number of our special students. has verified this anticipation. There are always a few students pursuing advanced courses of study, particularly in Natural History. Some of these, learning by experience the great opportunities for research offered by the University, and proving by their zeal and by their attainments that they know how to make use of them, are advised by their instructors to change their status from special to regular pupil. They enter with advanced standing, and take their degree in course. The graduates in the department of Natural History are largely recruited from this class. But, if we except these students, and another small class, who, unable to pass the entrance examinations, are studying to enter at a future time, it is difficult to assign a reason why, under the present relation of special students to the College, we have any special students. Their number ought to decrease from year to year.

The thirty-one students above enumerated attended the exercises of thirty-six different instructors. The whole number of courses taken, prescribed and elective, was one hundred and forty-four, an average of four and six tenths to each pupil. This, however, does not represent all the work of the School. Undergraduates of the College are now allowed to elect, either in course, or as extras, or by special petition, all the courses of the Engineering Department of the Scientific School, and all of these courses have been attended by undergraduates of the College during the past year. The Bussey Institute can send its students here to learn surveying and mechanical drawing. College students can take these two studies as extras, and by petition they are allowed to take the courses in Calculus and Mechanics, each of which, being five hours a week, counts as two college courses. The course in Mechanics is elected either by graduates who are candidates for a higher degree, or by those who intend after graduation to enter the Engineering department of the School. To the latter class, this course is especially recommended. The great difficulty with which we have to contend is to concentrate the time and attention of the student sufficiently upon his technical study. In his extended course, his specialty becomes only one item; his mental energies are frittered away over a multiplicity of subjects, and thoroughly devoted to none. If, during his undergraduate course in the College, he can cover the ground of all his preparatory studies, he will enter upon his technical course, after graduation, under the most favorable auspices.

Nothing is left to distract his attention from his technical studies: he will enter his course with all the advantages of a college training, and the best results may be expected.

Two degrees were conferred at Commencement, — one in Engineering, and one in Natural History.

H. L. EUSTIS, *Dean.*

To the President of the University: —

Sir: During the year 1881–82, seven students were instructed at the Bussey Institution. Two of them were in regular standing, while the others devoted themselves particularly to horticulture and botany. One student received the degree of Bachelor of Agricultural Science at Commencement.

Lectures, recitations, and practical exercises in Agriculture and Horticulture, and in Zoölogy, Chemistry, and Botany as applied to Agriculture, were given by Messrs. Motley, B. M. Watson, Slade, Storer, C. E. Faxon, and Ford. The course in Entomology, usually given in the spring by Mr. Burgess, was omitted this year because it happened that both the regular students, of whom it would naturally be required, had received this instruction in the previous year.

F. H. STORER, *Dean.*

To the President of the University:

Sir, — We have had the generous support of the same gentlemen named in my last Report (Messrs. Charles P. Curtis, William B. Weeden, Henry Lee, Alexander Agassiz, and Charles S. Sargent), in sustaining the publication of the University Bulletin for another year. The chief bibliographical contributions of the year, including those of previous years which have been concluded, are as follows:

1. *Historical Hydrography of the Handkerchief Shoal in the Bahamas*, by William H. Tillinghast, of the class of 1877, — a piece of thorough work, growing out of studies on the mooted question of the landfall of Columbus, and indicative of the richness of the Library's collection of maps, which in the main afforded the material of the Essay. It has since been issued as No. 14 of our *Bibliographical Contributions.*

2. *A Bibliography of Fossil Insects*, by Samuel H. Scudder, the Assistant Librarian. This was not wholly concluded during the year; but the type being set, a separate publication of it was made in advance of its completion in the Bulletin for October, 1882. As Mr. Scudder is recognized as the leading authority on this subject in the United States, and has added to his entomological studies a training in bibliographical research, the *Contribution* (No. 13 of the series), has peculiar claims for consideration.

3. *Calendar of the Arthur Lee Papers.* The enumeration of the contents of the seven volumes, as arranged by the late Mr. J. W. Harris, has been printed in full; but a package of unassorted papers sufficient to make an eighth volume has been found, and the publication of the *Calendar* will accordingly be resumed in the coming year.

4. *A List of the most Useful Reference Books*, by the Librarian. This series has been begun, the initial section covering in part an enumeration of chronological and allied Dictionaries and Manuals.

5. *Classified Index to the Maps in Petermann's Geographische Mittheilungen*, 1855–1881, by Richard Bliss, jr., of the United States Geological Survey. This useful key has been begun, and will add considerably to the value of the journal in question.

6. *List of American Authors in Geology and Palæontology*, by Professor J. D. Whitney of this University. The first half of this convenient guide appeared in the number for April, 1882, and the conclusion comes in that for October; meanwhile, the whole has been issued as *Bibliographical Contribution* No. 15.

The Librarian emeritus has charged himself with the preparation of the quarterly necrology of the University, which was begun in the April number. I must add that, in making up the University Notes of each number, I have found it much more difficult to secure contributions from the literary than from the scientific portion of the University staff.

I regret to say that ill-health has interfered with the continuous labors of Mr. George F. Arnold, the head of the shelf department, and has finally resulted in his withdrawal from the service. His careful, intelligent, and eminently practical methods in the classification will stand, however, for his successor as a fitting suggestion of the system which is yet to be applied to the science classifications of the library. The following report of the year's work done by Mr. Arnold under such disadvantageous conditions, has been prepared by his colleague, Mr. W. C. Lane, the present first assistant of the Catalogue department, with the aid of Mr. Frank Carney, Mr. Arnold's chief assistant.

The number of volumes now in place in the new stack is 70,042; the number added to the permanent classification during the year was as follows: —

Classical Philology (last 3 rows)	1,073
Cyclopædias	723
Added to classes previously arranged	2,276
Total	4,072

The rows of Classical Philology as arranged include the subjects Mythology, Inscriptions, Miscellany, Bibliography, and Literary History, Greek and Roman Arts and Sciences, Prosody, and Greek and Roman Philosophy. The Greek and Latin authors follow immediately, and have been collected on the shelves they are to occupy; the books are not yet perfectly arranged, but, as they will remain in their present condition for some time, they have been given temporary numbers, and the cards in the catalogue marked to correspond.

Besides these, about 2,000 volumes of newspapers have been brought together and partly placed in order.

These newspapers have been placed in the new room for newspapers and duplicates, which has been made by remodelling the basement of the original Gore Hall, as explained in last year's Report. The summer just passed did not test severely the freedom of the new room from damp, because of the continued dryness of the weather; but there is little ground for apprehension that less favorable seasons will cause any difficulty.

The limit of the work upon the classification of the collections has now been practically reached, and little can be accomplished except in the way of temporary expedients, till the old part of the building is remodelled, and space is prepared for the classification of the scientific portions of the Library.

The accessions to the University Library for the year, and the present extent of the various departments, are as follows: —

Departments.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) .	6,848	202,021	198,665
Law School	994	20,603	2,817
Scientific School	30	2,376	200
Divinity School	98	16,350	1,672
Medical School	39	2,048	....
Museum of Zoölogy	698	15,532	9,461
Astronomical Observatory . .	164	2,917	5,498
Botanic Garden	50	4,187	2,713
Bussey Institution	217	2,417	854
Peabody Museum	54	615	547
Totals	9,192	269,066	222,427

Of the accessions to the Gore Hall collection, there were added by gift 1,782 volumes and 3,861 pamphlets; and such accessions also include 41 volumes transferred from the Library of the Divinity School.

The Curator of the Peabody Museum adds to his return the following statement: "The Library has been catalogued and all publications not relating to Anthropology have been eliminated. The analytical work and classification is now in progress. Of the photographs and engravings no account has yet been made."

The figures of the Botanic Garden library are from a new count.

The following table shows the use of books at Gore Hall, as compared with the last three years: —

	1878–79.	1879-80.	1880–81.	1881-82.
1. Books lent out	41,296	41,986	45,481	48,194
2. Used in the building	10,921	7,812	11,724	10,498
3. Overnight use of reserved books	7,519	10,506	11,872	12,891
Total (excluding No. 3, which is included in No 1)	52,217	49,798	57,205	58,692
Cards giving to students temporary admission to the shelves	....	60	85	200
Times of use	....	340	870	2,542
Officers of instruction reserving books . . .	....	35	38	41
Number of books reserved	....	3,330	3,418	4,251

The 200 students using admission cards have been in these departments: History, 49; Science, 26; Art (including music), 22: Literature, 36; Greek and Latin authors, 49; Philosophy, 6; Theology, 4; and Political Economy, 8.

During 36 Sundays (till the long vacation came) 2,067 persons availed themselves of the opportunity of using the Library on those days, which is an average of 57 each Sunday, being an increase of ten over last year. The hours were from one to five o'clock. The highest number on any one day was 91 against 64 last year.

The work of the catalogue department is indicated by the following table, which has been furnished by Mr. Lane: —

	1878-79.	1879-80.	1880-81.	1881-82.
1. Cards put into the Public Catalogue . . .	36,390	35,315	41,215	34,168
2. Cards prepared	20,595	24,887	25,705	18,235
3. Volumes received	....	....	7,873	6,848
4. Pamphlets received	....	....	....	4,469

The official catalogue (authors only) was begun in 1834, and still contains a large number of titles, which have not been recatalogued for the public catalogue (authors and subjects), which was begun in 1860. The volumes which remain to be so treated are mostly those presenting difficulties, the easier sort having been earliest attended to. The number (535) whose cards have been added to the public catalogue is only a third of those added last year, since, with a diminished staff, work has been stopped on them.

The cataloguing of pamphlets (1,363) has gone on faster than revision could be applied, and a body of 500 is waiting for this final work. This also has been the result of insufficient help.

The pressure is also increased from the departmental cataloguing now done in Gore Hall, which covered 1,354 volumes and pamphlets for the year, beside the record slips made of books bought for the Greek and English departments, and single newspapers added to old files. By a computation 3,086 volumes and 5,420 pamphlets of recent accessions were uncatalogued on the 30th of September.

These figures indicate the urgent need of increasing the Library force, which by resignation and removal has been largely diminished during the year. The resignation of Miss Annie E. Hutchins, for many years an efficient member of the staff, has thrown the chief burden of the catalogue revision upon Mr. W. C. Lane, who was transferred from the head of the ordering department. His former place was filled at the same time by the appointment of Mr. W. H. Tillinghast.

The work of revising the public catalogue and adapting it better to the use of the frequenters of the Library, which has been the special charge of Mr. Scudder, the Assistant Librarian, is so well advanced, that we are nearly ready for the notation of classes. Mr. Scudder's Report is as follows:

"The revision of the subject catalogue in the interest of the numerical notation, which we are attempting to engraft upon it, has not proved an easy or a rapid task, as might indeed be supposed from the mere fact that it did not form part of the original purpose of the catalogue. The success, however, of such an attempt seems too clearly an advantage to grudge the labor attending it. As it renders the catalogue inflexible by fixing almost irrevocably even the details of its arrangement, no pains should be spared to make in the first place the whole as perfect as possible. The revision of the old primary subjects has been completed and their number reduced one third, with an actual change which would scarcely be noticed even by one constantly consulting the catalogue. The changes made since the last Report have involved alterations in the headings of about 1,500 cards, and the completion of the work has made the catalogue more consistent, more convenient, and a more efficient guide to the Library.

"On the completion of this revision of the main subjects, a collection was made of about five thousand additional words or compounds, which might be required for headings either in principal or subordinate places. These were sought in various lists of such terms, and particularly in those accompanying recent schemes for the classification of books, in Poole's new *Index to Periodical Literature* (the advance sheets of which were accessible), in a MS. list in the Boston Public Library, and in the 'branches' and 'sections' of our own subject catalogue. These headings have been entered on separate slips and arranged alphabetically, and will form, when completed, a subject-reference catalogue of all headings and subdivisions, both present and prospective. When revised, the cross references fully entered, and the notation added, it will form an invaluable adjunct to the catalogue department, and serve as the basis of the complete index to our subject catalogue, which has been contemplated from its formation, and which it is hoped one day to print, to enable the tyro to consult the catalogue as readily as the adept.

" A preliminary revision is already advanced and will probably be completed at an early day. The notation will then be determined on for all the main headings, and before the end of the calendar year it is hoped to apply it to the furthest details of some one subject, to be followed by others as rapidly as is consistent with accurate revision."

The Library still continues to have charge of the issue of the weekly *Calendar* of the University.

JUSTIN WINSOR, *Librarian.*

To the President of Harvard University: —

Sir: I respectfully submit the following Report on the Botanic Garden for the Academic year 1881–82.

During the past year the Garden has suffered much from the protracted dryness of the season, but the loss has been kept within comparatively narrow limits by the unwearied care of the head-gardener, Mr. William Falconer. The soil of the whole Garden is a stiff clay which has never been systematically underdrained; hence the ground, which is thoroughly drenched by the spring rains, becomes "baked" and very hard to work during even a short period of drought. The amount of water purchased by us throughout the year, for out-door plants as well as for those in the greenhouses, is a burden of expense which ought not to be borne by our funds. The inhabitants of Cambridge are admitted to our grounds and conservatories at all times, and the number of visitors from this vicinity is large and constantly increasing. We encourage their coming, and endeavor to make the Garden not only instructive to those who are interested in Botany, but attractive to all. It is therefore, for all practical purposes, a public park, but with this difference, — the city of Cambridge, in which it is situated, is not responsible for its care. It appears to be a fair request to make of our city government that they remit the charge for the water which we use in the Garden. It is the purpose of the Director to bring the matter to the attention of the proper authorities, feeling sure that a request so reasonable in its character will not be refused.

The Garden is annually cultivating a larger number of plants for the illustration of Economic Botany. It is believed that a still fuller exhibition of the plants, both indigenous and exotic, from which the textile fibres, dyes, tanning materials, drugs, and foods are produced, cannot fail to be of interest and profit to all classes of students in our University.

It is a matter of regret to the Director that the limited size of the lecture-room at the Botanic Garden makes it unadvisable to offer to the students a short course of general lectures on the principal features and phenomena of vegetation. Many undergraduates and professional students, who cannot spare the time to pursue a special course in Botany, might be glad to be placed in possession of the more general facts and principles of the science. But, since the lecture-hall at the Garden accommodates only eighty listeners, such a general course upon our grounds is impracticable. The remoteness of the Garden from the College yard would render it a difficult task to transfer to one of the halls there the living specimens required for illustration. Failing this, it has been thought best to devote a part of the Garden to the exhibition of specimens which display the more striking characters of the structure of plants, and to increase our number of plants useful in the arts.

The recent acquisition of a full suite of specimens of the drugs of the United States Pharmacopœia, and of a large proportion of those which are officinal in other countries, suggests the desirability of offering to medical students a short course on medicinal plants. Two of the existing electives in Botany are taken by the undergraduates intending to enter the Medical School. These electives can now be more fully illustrated than ever before.

No material changes have been made within the year, in any of the greenhouses. They continue to fall out of repair, and the question of their partial or complete reconstruction cannot be much longer deferred with safety. The Director has been unwilling to undertake any rebuilding until the funds for the support of the Garden are more ample. Although by the exercise of great economy the running expenses of the past year have been kept within the assured income, it has been impossible to engage in some much needed improvements without encroaching upon the capital. All rebuilding must therefore wait the result of renewed efforts on the part of the Overseers' Committee on the Botanic Garden.

hen the Botanic Garden was in extreme need, John l, Esq., at that time a member of the Corporation, ously the sum of five hundred dollars for immediate year following he gave one thousand dollars for the , and a like sum annually thereafter until 1876. Lowell subscribed one thousand dollars to the new support of the garden, but subsequently authorized to transfer the amount to the income for the year. nount was given the next year. In January, 1882, extract from Mr. Lowell's will was received by the

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d bequeath to the President and Fellows of Harvard sum of twenty thousand dollars to be added to the s Fund for the Botanic Garden, on condition that ll be named in honor of my Grandfather, Judge by his exertions mainly procured the original sub- Lowell Fund for a Botanic Garden."

d of January, the Corporation voted "that the Mas- nd for the Botanic Garden be hereafter named the for a Botanic Garden, in honor of the late Judge mainly procured the original subscriptions, and in ith a provision made by the subscribers to the Fund of its name under certain circumstances."

r. Lowell's bequest, there is secured to the Botanic nount equal to that which it had received annually period of years. The new name of the fund may led as commemorative of two of the chief benefac- arden. Attention should also be called to the fact barium was, in 1864, the recipient of the costly ary of Mr. Lowell, and that it has proved to be a portion of the Herbarium Library.

e Director much pleasure to report that he was two members of the Garden Committee to pur- rope apparatus for our Botanical Laboratory. For five hundred dollars he has been able to procure the and other appliances which are absolutely required es of demonstration and research. In the selection y aided by the advice and assistance of the professors he German Universities. But it is needless to say argely governed in this selection by a realizing sense of the scanty space in which the apparatus was to be stored and used.

It is proper to state, further, that means were also provided by another member of the Committee for the careful study of the workings of the Botanical Gardens and Institutes of Germany. The results thus obtained will be presented to the Committee on the Garden. By a minute investigation of the methods employed in the gardens belonging to the Universities many suggestions were obtained which may lead to important changes in the scope of our Garden, by which its efficiency as an educational appliance of the University can be increased, and, at the same time, it can be made more generally useful to the public from which it has already received a portion of its funds and to which it may confidently look for more.

From the memoranda of the Curator of the Herbarium, it appears that 8760 plants have been added during the year. The accessions to the Botanical Library of the Herbarium have been as numerous as in the previous year.

During the absence of the Director, the general supervision of the Garden was placed in the hands of Professor Gray and Mr. Sereno Watson. By their care, and by the energy of the head-gardener, the Garden has continued to improve in many directions. That these improvements may be carried on still further, and that others quite as important may be undertaken, our funds must be increased. It is the intention of the Committee on the Garden to resume at an early day their solicitation for this purpose.

GEORGE LINCOLN GOODALE, *Director.*

To THE PRESIDENT OF THE UNIVERSITY: —

SIR, — As Director of the Chemical Laboratory, I have the honor to present the following Report for the academic year 1881–82: —

During the past year the Director was absent in Europe, and the courses of instruction in the Laboratory were distributed as follows: The course of elementary lectures on general chemistry to the Freshman class was delivered by Professor Jackson in place of the Director; the course on descriptive chemistry (Chemistry I. of the elective courses of the College) was as usual conducted by Professor Jackson, with the assistance of Dr. Mabery during the practical exercises in the Laboratory; the course on Mineralogy (Chemistry II.), usually in charge of the Director, was given wholly by Dr. Melville; the course on qualitative analysis (Chemistry III.) was given as heretofore by Assistant Professor Hill, with the assistance of Dr. Mabery in the laboratory work; the course on quantitative analysis (Chemistry IV.), usually in charge of the Director, was given wholly by Dr. L. P. Kinnicutt; the course on organic chemistry (Chemistry V.) was given as in past years by Professor Hill; finally, the advanced students (Chemistry VI. and IX.) worked under the special direction of Professor Jackson or Hill. The several laboratories were under the constant oversight of the assistants, — the qualitative laboratory of Dr. Mabery, the quantitative laboratory of Dr. Kinnicutt, the organic laboratory of Mr. Sanger, and the mineralogical laboratory of Dr. Melville. The total number of students occupying desks at the Laboratory was two hundred and thirty-three, and the total number receiving instruction over four hundred and fifty.

The past year was marked by great activity in the scientific work of the Laboratory. Professor Jackson, with Mr. A. E. Menke, published three papers, — two on curcumin, the yellow coloring matter of turmeric; and one on turmerol, the oil which gives its taste and odor to the same well-known vegetable dye-stuff. He proved that vanillin, the flavoring principle of vanilla, could be made from curcumin, and that the latter substance was a diatomic monobasic acid. Besides studying the potassium salts of curcumin, he investigated also its bromine derivatives, as well as its dihydride. Turmerol was proved to be an alcohol derived from a very complex hydrocarbon, and when oxidized by potassic permanganate it was found to yield terephthalic acid. The results of previous observers in regard to these two substances were corrected, and the formulae of the compounds for the first time established; that of curcumin being $C_{14}H_{14}O_4$, and that of turmerol $C_{20}H_{29}OH$.

Researches were undertaken by Professor Hill to elucidate the constitution of mucobromic acid, more especially to determine the position of the two bromine atoms not only in the molecules of this acid, but also in those of the directly related dibromacrylic and dibrommaleic acids, and in this connection dibromacrylic acid itself was submitted to more careful study than had hitherto been given to this compound. It having been found that potassic nitrite acts with remarkable facility upon mucobromic acid and its ethers, the products thus resulting were partially studied, and a preliminary account of this investigation was published in the "Berichte" of the Berlin Chemical Society. All this work was a continuation of previous work on furfurol and some of its derivatives. In connection with these investigations, the following papers were published by Professor Hill: —

1. On Dibromacrylic Acid.
2. On the Relation between Dibromacrylic Acid and Tribrompropionic Acids, in connection with Mr. C. W. Andrews.
3. On certain Tetrasubstituted Propionic Acids, in connection with Dr. C. F. Mabery.
4. On the Constitution of the Substituted Acrylic and Propionic Acids.
5. "Ueber die Einwirkung von Salpetrigesaurem Kali auf Mucobromsäure," in connection with Mr. C. R. Sanger.

A large number of crystallographic determinations and measurements were made by Dr. W. H. Melville, and the results were published in the following papers: —

1. On the Crystalline Form of Cryolite.
2. On the Crystalline Form of White Tourmaline.
3. On the Crystalline Form of Iodide of Arsenic.
4. On the Crystalline Form of a Dichloracrylic Acid.
5. On the Crystalline Form of Tribromacrylic Acid.
6. On the Crystalline Form of Dibromiodacrylic Acid.
7. On the Crystalline Form of Chlorbromiodacrylic Acid.
8. On the Crystalline Form of Tetrabrompropionic Acid.
9. On the Crystalline Form of *a* Dichlordibrompropionic Acid.
10. On the Crystalline Form of *β* Dichlordibrompropionic Acid.

The first five of these papers were published separately, the last five in connection with papers before mentioned in which the several substances were otherwise described.

Two papers were published by Dr. L. P. Kinnicutt.

1. An indirect Determination of Chlorine and Bromine by Electrolysis.
2. Formation of Phenylglyceric Acid from Cinnamic Acid Dibromide.

The tenth summer course of instruction in chemistry, given in 1882 under the direction of Dr. Mabery, was attended by thirty-three persons, eighteen of whom were teachers in other colleges or in the secondary schools. Both elementary and advanced instruction was given, and several original investigations were undertaken, two of which were completed.

The action of bromine on the dibromacrylic acid, first described by Fittig and Petri, was studied by Professor Franklin C. Robinson. The composition of the resulting tetrabrompropionic acid was determined by analyses, and some of its more important salts were made and analyzed. Its decomposition products also were submitted to careful study.

An examination was made of the decomposition products of chlortribrompropionic acid. Since chlordibromethylen, the volatile product of this decomposition, proved to be identical with that obtained by Wallack from β-dichloracrylic acid, the chlorbromacrylic acid from which chlortribrompropionic was made would naturally have an analogous constitution. In February, 1882, the following papers were published in the Proceedings of the American Academy upon results which were obtained in the summer of 1881: —

1. On Diiodbromacrylic and Chlorbromiodacrylic Acids. By Charles F. Mabery and Rachel Lloyd.
2. Preliminary Notice on Orthoiodbenzylbromide and its Derivatives. By Charles F. Mabery and Franklin C. Robinson.
3. On Chlortribrompropionic Acid. By Charles F. Mabery and H. C. Weber.

Of the above-mentioned twenty-three papers, published under the general title of "Contributions from the Chemical Laboratory of Harvard College," each one contains a positive addition to knowledge.

During his journey in Europe the Director has added very materially to the means both of instruction and of research. A dynamo-electrical machine with an adequate motor has been placed in the basement of the Laboratory. The apparatus required for investigations in the new branch of the science, called thermochemistry, has been procured. Several hundred valuable specimens have been added to the mineral cabinet, and placed on exhibition in the cases; and a favorable opportunity enabled the Director to procure at small cost several thousand characteristic mineral specimens for the use of students. It has been very difficult hitherto to procure suitable specimens in sufficient number and variety for the large class in mineralogy, and, this want having been thus supplied, the laboratory teaching in this subject will be made more effective.

JOSIAH P. COOKE, *Director*.

To the President of the University:

Sir, — The progress made in the reduction of the past observations has been the distinguishing feature of the last year. The micrometric observations of the large telescope, to the beginning of 1882, have been published, and the volume has been distributed. A large part of it is occupied with the work of my predecessor, the late Professor Winlock, upon double stars, nebulæ, and other objects, including spectroscopic results. The reductions of the zone observations made with the meridian circle from 1871 to 1879 are now approaching completion. The meteorological observations from 1840 to 1880 have been brought together and are nearly ready for publication. The most important piece of photometric work as yet undertaken here has been completed, and the catalogue giving the results of the measures of four thousand stars is now in the hands of the printer. It thus appears that if the present rate of work is maintained, it will not be long before the accumulated observations of the past are reduced and printed, and we may anticipate a publication of our future observations without a delay greater than is needed for their reduction.

The work of the various instruments will now be considered in detail.

East Equatorial.

Eclipses of Jupiter's Satellites. — The observations of these eclipses photometrically, begun in 1878, have been continued during the past year. One hundred and eighty-five eclipses have been observed, thirty-two since Nov. 1, 1881.

Objects having singular Spectra. — The search for these objects in previous years has been mainly in regions selected without special system. The heavens have now been divided into sections of equal area, and a rectangle of 5° by 10° in the centre of each has been selected for examination. The twelve regions having centres at declination + 15° and right ascension 1^h, 3^h, 5^h, etc., have all been swept over in this way. Of the twelve corresponding regions having a declination of — 15° six have so far been examined. From this systematic search, we may learn in what portion of the heavens we may expect to find objects of interest, and thus justify a more extended examination. The absence of such objects in other regions will also show that a further search in their vicinity is unadvisable. Several minute planetary nebulæ have been found near the Milky Way, but none at a distance from it. A special search was therefore made last summer in the Milky Way from — 30° to + 20°. This resulted in the discovery of seven new planetary nebulæ. Most of these objects, although moderately bright, are so minute that they could not be distinguished from stars by an ordinary eyepiece. One of them has hitherto been mistaken for a star, and is given in the catalogues as DM. + 1° 3979.

Satellites of Mars. — At the last opposition of Mars the satellites were looked for and were repeatedly seen by Mr. Wendell and myself between December 16 and February 24. It thus seems probable that these objects may be seen with our telescope at any opposition of the planet. The observations made of them here on this occasion were entirely photometric. The results were in general confirmatory of those obtained at the oppositions of 1877 and 1879, but the difference between the brightness of Deimos when preceding and when following Mars, which had been formerly noticed, was not now apparent.

Lunar Objects.—The photometric determination, for the Selenographical Society, of the brightness of various points on the Moon, mentioned in the last report, was completed and the results communicated to the Society. They appear in the Selenographical Journal, V. 57. It appeared from this investigation that the scale of brightness in common use by observers of the Moon might be very closely expressed in terms of stellar magnitudes, each degree of the scale answering to the ratio of light equivalent to six tenths of a magnitude.

Double Stars. — As a part of the bibliography noted below, a list has been prepared of the double stars, the variability of whose components has been suspected. The photometer employed in the observations discussed in Volume XI. Part I., is especially suited to observing such objects. The usual methods of detecting variability fail when applied to the double stars. One of the most striking instances in this list is the star *θ Serpentis*, one component of which has been thought to be variable by Dr. Gould. According to our observations on three evenings in 1878, the respective differences in magnitude of its components were 0.5, 0.5, and 1.4. It has been repeatedly measured during the past year with the results 0.4, 0.4, 0.4, 0.5, 0.4, on different evenings. In general each of these numbers is the mean of sixteen settings.

If really variable, the star probably belongs to the Algol class, and this conclusion seems unavoidable unless the wrong star was observed in the last measures in 1878. The measures show the great precision attainable with this form of photometer.

Wedge Photometer. — A modification has been made of Professor Pritchard's wedge photometer which seems to render it especially suitable to the measure of the light of faint stars in zones. The wedge is placed so that the diurnal motion of the stars carries them from its thin to its thick portion, and the time of disappearance is noted. A bar in the unobstructed part of the field serves to determine the position of each star. From 1852 to 1860 the measurement of the positions of the stars from the equator to one degree north formed an important part of the work of the large telescope. The stars in the northern 10′ of this zone have been arranged in catalogue form, and the necessary preliminary observations have been made by Mr. Searle. Besides determining the light of these objects it is hoped that some interesting cases of proper motion may be detected.

Sawyer's Variable. — A careful study of this interesting star by Mr. Chandler proved that it belonged to the Algol class, and also that its period was only about twenty hours. This gives it the shortest period of any variable star as yet discovered, and only a little more than one third of the period of any other variable of the same class. The variation of light is about three fourths of a magnitude. A long series of observations of the light curve and of successive minima has been made by Mr. Chandler, and gives the period $20^h\ 7^m\ 41^s.6$, with a probable error of $1^s.3$.

The comparison stars were measured on ten nights with the meridian photometer, and furnished a means of reducing these observations to absolute light ratios. The light curve has also been determined photometrically by Mr. Wendell and myself. Observations were made on eighteen nights and give a very precise measure of the changes of light.

Comets. — The telegraphic system for the speedy transmission of various data respecting comets, which was mentioned in the last report, has been maintained and extended. The first observation of a new comet which is obtained at this Observatory is now telegraphed to Europe in advance of the elements, and is often found useful by European computers. It has happened in two cases, those of the comets discovered by Messrs. Wells and Barnard, that the receipt of the position obtained here was the first intimation abroad of the discovery. This led in the case of the Wells comet to the supposition that the discovery had been made at this Observatory, and to guard against similar errors in future, the despatches are now made fuller, giving the facts of discovery as well as the positions. Arrangements have also been made with Mr. Swift, director of the Warner Observatory at Rochester, in accordance with which he forwards information received by him of new discoveries, either for immediate transmission to Europe, or for a previous investigation here.

The four comets, discovered respectively by Swift in 1881, by Wells and Barnard in 1882, and by various southern observers (the great comet of the year), will show the working of this system. In each case, an observation was obtained at this Observatory on the night following the receipt of intelligence of the discovery, and an orbit was computed, telegraphed to Europe, and published by the Science Observer in this country, during the next four days. In two cases, the accurate position obtained here, and telegraphed in advance of the orbit, was published abroad on the day following that on which the news of the discovery reached us. The orbit of Swift's comet sent from this Observatory first announced its discovery to European astronomers, as likewise happened in two cases already mentioned with regard to the first observation obtained here. These first observations were extensively used in the computations made in Europe. Cloudy weather prevented sufficient data for an orbit of the great comet from being secured here in the first few days of its appearance; but, on receipt by telegraph from Europe of one more position, the orbit was computed and telegraphed back within seven hours.

MERIDIAN CIRCLE.

After continuous observations extending over twelve years, Professor Rogers has found it necessary to take a prolonged rest from night work. The interrupted series will be resumed in February, 1883. Meanwhile the instrument has been used in determining the local time. Its constants, including the collimation, the level, the flexure, the reading of the long collimator, and the index error of the circle, have been determined every week.

Excellent progress has been made with the reduction of the observations from 1870 to 1879. These observations will occupy about twelve hundred printed pages, and will fill three volumes of the Annals. The subject will probably be divided according to the following plan. The first volume will contain an introduction giving a description of the processes of observation and of reduction, and a discussion in detail of the instrumental constants for the entire period. The tabular values of these constants will be given for each date. The greater portion of this volume will be devoted to a table which will give the mean times of transit, the circle readings, the constants needed in the reduction, and the resulting right ascension and declination of each of the fundamental stars observed. The second volume will contain all the zone observations in journal form. The quantities used in the reduction of the zone stars will also be given in this volume. The third volume will contain the observations of the secondary polar stars observed during the years 1872–73, the observations of a list of stars made at the request of the United States Coast Survey in 1878, and all the miscellaneous observations made previous to 1879. The second part of this volume will contain the final catalogues of the primary stars, of the secondary stars, and of the zone stars reduced to 1875.0

The introduction to the first of these volumes, occupying one hundred and fifty pages of manuscript, is completed and is ready for publication. The data for the body of the work are also complete except the introduction of the newly determined instrumental constants depending directly upon the system given in Publication XIV. of the Astronomische Gesellschaft. The preparation of the copy for publication has recently been commenced.

Of the second volume, the reduction of the zone observations to the beginning of the year of observation has been completed, and the copy containing the original data has been prepared for the printer. It occupies about six hundred pages of manuscript. The reduction of the Durchmusterung places from 1855 to 1875 is nearly completed. A large part of the reductions of the zone observations are to be examined either by cross checks or by recomputation. All doubtful observations are to be investigated, and the positions are to be reduced from the beginning of the year of observation to 1875.0 by means of manuscript tables.

The only portion of the third volume which is ready for publication is that containing the observations of the Coast Survey Catalogue. This occupies one hundred pages of manuscript. The reduction of the Polar Catalogue with the newly determined instrumental constants, and the formation of the final catalogues, still remains to be made.

MERIDIAN PHOTOMETER.

The measurement of the light of the stars visible to the unaided eye was completed last summer. Over ninety thousand measures were made on about four thousand stars, most of them being observed on from three to six nights. The more important stars were measured more frequently. Four settings were made every evening on each object. A series of estimates by the unaided eye have also been made by three observers for purposes of comparison. The entire work will involve the discussion of several problems of general interest in connection with the light of the stars. Among these may be mentioned the atmospheric absorption. A discussion of about fifteen thousand observations available for this investigation shows that we may assume that the absorption at any altitude, exceeding 15°, equals in stellar magnitudes one quarter of the secant of the zenith distance. This agrees very nearly with the empirical law deduced by Seidel, especially if we apply a correction for the low barometric pressure due to his great elevation. The average deviation of the two laws does not exceed a thirtieth of a magnitude. A special series of eye estimates serves to extend this law to the horizon.

The constancy of the Pole Star is established by the same observations with the photometer. A series of eye estimates was also made to compare the light of the Pole Star with that of other stars of nearly equal brightness near it, and shows that the relative position of two stars to be compared has an important influence in their apparent brightness. After applying a proper correction, the average deviation of the results is reduced to six one hundredths of a magnitude. An extended comparison of the scale of magnitudes employed by previous observers has been made. A reduction of the observations of Sir William Herschel has been effected, and has led to interesting results. His observations of the light of the stars are not only far superior to any similar work preceding it, but are more precise than most of the subsequent determinations. Their neglect hitherto is partly due to the want of a suitable system of magnitudes by which they might be reduced. This want is supplied by the photometric measures now under consideration. There seems also to have been an impression that the intervals employed by Herschel were so large as to render the observations uncertain. Our reduction shows that the intervals he designated as a period, comma, and dash, do not exceed one, two, and four tenths of a magnitude; and that the average deviation of a single comparison of two stars, expressed in magnitudes, is only 0.25. As this includes the error of our measurements of each star, the difference of each as seen by the eye from its true brightness, and the variation each has undergone during the past century, it is obvious that the errors of Herschel's observations must be very small. We have thus an accurate measure of the brightness of a large part of the lucid stars a hundred years ago. This will be of the utmost value in determining any changes of long period that may take place in their light.

The large meridian photometer announced in my last report has been completed, and work with it begun. Sheets have been written for about ten thousand stars to be observed with this instrument. Over seven thousand measures have so far been made, mainly of the stars in the over-lapping portions of the zones assigned to different observatories engaged in the revision of the Durchmusterung. The measurement of the stars adopted as standards for the Uranometria Argentina is also in progress.

PUBLICATIONS.

Volume XIII. Part I., of the Observatory Annals, was published and distributed in October, 1882. It contains the previously unpublished results of micrometric observations made here to the end of 1881, mentioned in detail in the report of last year.

The printing of Volume XIV. is now in progress. This volume is to contain the results obtained with the first meridian photometer. The part of the work first printed consists of a catalogue of stars visible to the naked eye in this latitude, with their magnitudes as determined by the photometer, by the recent estimates of the northern stars likewise made here, and by various older series of observations.

The papers mentioned below have appeared during the year as communications from the officers of the Observatory. A few are added to the list which were overlooked in the preparation of the last report.

Report of the Committee on Standards of Stellar Magnitude. By Edward C. Pickering and others. Proc. Am. Assoc. for Advancement of Science, August, 1881; xxx. 1.

On a Convenient Method of expressing micrometrically the Relation between English and Metric Units of Length on the same Scale. By W. A. Rogers and G. F. Ballou. Id. xxx. 116.

On a Method of reducing Different Catalogues of Stars to a Homogeneous System. By W. A. Rogers. Id. xxxi. 11.

On the Performance of a New Form of Level invented by Mr. John Clark of the United States Coast Survey. By W. A. Rogers. Id. xxxi. 14.

New Variable Star in Puppis. By Edward C. Pickering. Astronomische Nachrichten, c. 13.

Elements of Comet *b* 1881. By S. C. Chandler, Jr. Id. c. 121.

Elements and Ephemeris of Comet *e* 1881. By S. C. Chandler, Jr. Id. c. 319.

On the Telegraphic Transmission of Astronomical Data. By S. C. Chandler, Jr., and J. Ritchie, Jr. Science Observer, August, 1881, iii. 65.

Comet *b* 1881. By O. C. Wendell. Id. iii. 81.

Report on the Progress of the Zone Observations. By Edward C. Pickering. Vierteljahrsschrift der Astronomischen Gesellschaft, 1881, xvi. 317.

Letter to the Astronomische Gesellschaft on the Science Observer Code. By S. C. Chandler, Jr., and J. Ritchie, Jr. Id. xvi. 344.

Order of Brightness of Stars. By Edward C. Pickering. English Mechanic and World of Science, November, 1881, xxxiv. 278.

Remarkable Star Spectrum; New Planetary Nebula. By Edward C. Pickering. Science, December, 1881, ii. 581. Copernicus, December, 1881, i. 242.

Geodetic Formulæ. [Second Paper.] By J. Rayner Edmands. Appalachia, December, 1881, ii. 351.

Elliptic Elements of Comet *f* 1881 — Denning. By S. C. Chandler, Jr. Science Observer, December, 1881; iii. 91.

Reply to Inquiries regarding Time Balls. By Edward C. Pickering. Professional Papers of the Signal Service, No. 5, p. 24.

Observations and Elements of Barnard's Comet, 1881, VI. By S. C. Chandler, Jr. Astronomische Nachrichten, ci. 57.

Stars with Peculiar Spectra, discovered at the Astronomical Observatory of Harvard College. By Edward C. Pickering. Id. ci. 73.

On the Periodicity of Comet (Denning) 1881, V. By S. C. Chandler, Jr. Id. ci. 93.

Observations of Comets, 1881, V., and 1881, VIII. By O. C. Wendell. Id. ci. 231.

Observations of Comets, 1880, IV., and 1881, II. By O. C. Wendell. Id. ci. 299.

The Pleiades. By Edward C. Pickering. Astronomical Register, February, 1882, xx. 40.

Variable Stars. By Edward C. Pickering. English Mechanic and World of Science, February, 1882, xxxiv. 542.

On the Variability of DM. + 23° 1599. By S. C. Chandler, Jr. Astronomische Nachrichten, cii. 139.

Photometric Observations of Planets and of Jupiter's Satellite, III., made at the Harvard College Observatory. By Edward C. Pickering. Id. cii. 151.

Photometric Observations of the Satellites of Mars, 1881–82. [E. C. Pickering and O. C. Wendell, observers.] By Edward C. Pickering. Id. cii. 193.

Erratum in Observations of Comet Wells, 1882. By Edward C. Pickering. Id. cii. 223.

On Certain Zodiacal Phenomena. By Arthur Searle. Id. cii. 263.

On Sawyer's Variable, DM. + 1° 3408. By S. C. Chandler, Jr. Id. cii. 371.

On a New Variable Star in the Constellation Cetus. By S. C. Chandler, Jr. Science Observer, March, 1882; iii. 105.

The Mountains between Saco and Swift Rivers. [With map.] By J. Rayner Edmands. Appalachia, June, 1882; iii. 57.

The Meridian Photometer. By Edward C. Pickering. Monthly Notices of the R. Astr. Society, June, 1882, xlii. 365.

Photometric Comparisons of Lunar Objects. By Edward C. Pickering. Selenographical Journal, July–August, 1882; v. 53, 57.

On Certain Zodiacal Phenomena. By Arthur Searle. Science Observer, July, 1882, iv. 4.

On Sawyer's Variable, DM. + 1° 3408. By S. C. Chandler, Jr. Id. iv. 11.

Photometric Measurements of Sawyer's Variable (DM. + 1° 3408) and its Comparison Stars. By Edward C. Pickering. Astronomische Nachrichten, ciii. 61.

New Planetary Nebulæ. By Edward C. Pickering. Id. ciii. 95, 165.

Observations of Comets, 1881, III., IV., VI. By O. C. Wendell. Id. ciii. 145.

Small Planetary Nebulæ, discovered at the Harvard College Observatory. By Edward C. Pickering. The Observatory, October, 1882, v. 294. The Sidereal Messenger, October, 1882; i. 139.

Plane *v.* Cylindrical Surfaces. By W. A. Rogers. Mechanics, No. 31, p. 90.

A Study of the Problem of Fine Rulings with respect to the Limits of Naked Eye Visibility and Microscopic Resolution. By W. A. Rogers. Am. Monthly Microscopical Journal, September, 1882, p. 165.

A Comparison of the Harvard College Observatory Catalogue of Stars for 1875.0 with the Fundamental Systems of Auwers, Safford, Boss, and Newcomb. By W. A. Rogers. Memoirs of the Am. Acad. of Arts and Sciences, x. 389–429.

On the Conditions of Success in the Construction of Standards of Length and in their Subdivision into Equal Parts. Read before the American Society of Microscopists at the meeting held at Elmira, N. Y., August, 1882. By W. A. Rogers. Mechanics, Oct. 27, 1882, and later.

A Plan for Securing Observations of the Variable Stars. By Edward C. Pickering. Cambridge, 1882. 8°.

On the Period of R Hydræ. By S. C. Chandler, Jr. Astronomische Nachrichten, ciii. 225.

Variable Stars. — The bibliography of the variable stars undertaken by Mr. Chandler last year has been nearly completed, so far as the preparation of the list of references is concerned. The catalogue of stars suspected of variability, and the remarks relating to each, are nearly complete. A plan has been prepared for securing co-operation in the observation of these objects. A pamphlet has been published relating to this matter, and will be furnished to all persons making application for it. It is hoped that many astronomers will be inclined to aid in this work, as observations which if detached might have little value would be most useful as part of an extensive system of observations. The aid of amateurs is especially invited, since the necessary skill is soon acquired and the habit of making observations of permanent utility would often have a value as great as the direct results anticipated. The aid of lady observers is also desired, since much useful work could be done by them at their own homes. Among the many ladies owning telescopes are doubtless some who have the time and inclination, and might, if properly directed, make observations of great value to science. The observations of the light curves of the variable stars of long period have been much neglected, and observations with this object in view are also needed. A number of observers have promised their aid, and by next year I shall hope to report a large amount of useful work accomplished.

MISCELLANEOUS.

Cambridge was not selected by the United States Commission as a station for observing the transit of Venus. This was in some respects unfortunate, as a complete series of observations were made here in 1878 of the transit of Mercury. This was done at the request of the Naval Observatory, with the expectation that we should thus be prepared to observe the transit of Venus at the present time. On the other hand it is extremely doubtful whether the results obtained during the transit will add materially to our knowledge of the distance of the Sun, and the chance of a cloudy day is twice as great as that of a clear one. I regard the expenditure of money on large pieces of routine work, where a result of value is certain to be secured, as more advisable than any large expenditure for observing occasional phenomena, where clouds may prevent the attainment of any result. If clear, the contacts will be observed, with such other facts as can be noted without much previous expenditure of time or money. Photographs might have been taken without the aid of the United States Commission; but, as they would necessarily have been made according to a somewhat different system, it is doubtful whether they would have added to the value of the whole.

During the past year, no change has occurred in the corps of assistants, which remains as described in the last Report. The buildings and grounds have been kept in good order without alteration, except that an additional flight of steps has been placed near the southwestern corner of the building, to make the path along its southern side more readily accessible. The West Equatorial has been removed from its pier for use in experiments on the horizontal mode of mounting telescopes, and its place is temporarily supplied by an excellent six-inch refractor belonging to Mr. Chandler.

The time service, in general charge of Mr. Edmands, has been carried on successfully as in previous years. The time ball was dropped correctly on three hundred and fifty-nine days, three hundred and seventeen by telegraph and forty-two days by hand. On three days it failed to drop at twelve o'clock, and according to the rule was dropped precisely five minutes later. On two days it was impossible to obtain the signals, and on one day an accident to the machinery rendered it impossible to raise the ball.

FINANCIAL CONDITION.

Having thus considered the scientific work of the Observatory, its present critical financial condition may be stated briefly. The subscription of 1878, which has given us an increase in income of five thousand dollars, expires with the present year. With this, three instruments instead of one have been kept at work, the corps of assistants has been doubled, excellent progress has been made in reducing the observations of the past, and a large number of volumes of annals and brief publications have been issued. An attempt is now being made to secure a fund of one hundred thousand dollars to render permanent this increased rate of work. Over thirty thousand dollars have already been promised conditionally, the principal limitation being that at least seventy-five thousand dollars shall be secured before next September. A failure in this subscription will involve a return to the condition of comparative inactivity which we were previously obliged to maintain. With success, we shall have the means of accomplishing the amount of work to be expected from the standing of this University, and demanded by the advanced views regarding literary and scientific work held in this part of the country.

EDWARD C. PICKERING, *Director.*

To the President of the University:—

Sir,—I have the honor to submit the following Report upon the condition and progress of the Arnold Arboretum during the year ending August 31, 1882.

The City Council of the City of Boston in December, 1881, by a nearly unanimous vote, authorized their Park Commissioners to expend the sum of sixty thousand dollars in buying certain pieces of land adjacent to the Arboretum, on the condition that satisfactory arrangements could be made with the President and Fellows of Harvard College for the use, under certain restrictions, of the Arboretum as a public park. Some progress has since been made towards this arrangement, which, without interfering with the scientific aims of the Arboretum, will increase its local influence by freely opening its collections to the public, and by securing for it additional and greatly needed land, suitable and dignified approaches, and carriage drives. Sufficient progress, however, in these negotiations has not been made to authorize the final adoption of any plan of planting the collections; and it has been found necessary to postpone again the arrangement of the Arboretum. This delay is greatly to be regretted. It necessitates the constant moving of the plants in the nursery, thus increasing the cost of maintenance, and threatening to injure if not destroy many rare trees procured or raised for the Arboretum with no small labor; for, as I pointed out in my last Report, it is impossible to arrange the plantations in the grounds now occupied on any plan which could be adjusted to the larger scheme under contemplation.

The nurseries have been enlarged by the addition of an acre and three quarters, and have been almost entirely remodelled and replanted. They are in a satisfactory condition and contain a great number of valuable and interesting plants.

Various experiments in book-keeping have been tried from time to time with the view of preserving an accurate record of every plant in the collection; they have not hitherto been satisfactory, and have been abandoned as either too complicated or too expensive for practical working. The future value of the Arboretum would, however, be greatly increased, if the history of each tree could be preserved as a record of the hardiness and rate of growth of the species, or of different individuals of the same species raised under different conditions or descended from ancestors long subjected to different climatic conditions. An attempt, which promises to be successful, to preserve such records by means of a Card Catalogue similar to those now in general use in Public Libraries, has been made during the year, and a complete Catalogue of the collection has been prepared. A numbered card represents each species in the collection; and a card with the same number with an additional sub-number represents each distinct lot of plants of the species, raised at different times or obtained in a different manner from the lot represented by the first card.

The card contains the name of the species, the source from which the plant is derived, and, if raised in the Arboretum, the date at which the seed was sown, space being left for correcting the name when necessary, and for future records such as the date of final planting, or any notes upon the rate of growth, hardiness, &c., of the species which may seem desirable. This plan offers many advantages, and it is hoped that it will bear the test of continuous use. The collection is now represented by some 2,250 cards.

The interchange of plants and seeds with other botanical and horticultural establishments has been continued during the year. There have been 6,101 plants and 181 packets of seeds distributed, as follows: to all parts of the United States 4,792 plants (including a large number of cuttings supplied to different Public Gardens, and nursery establishments in various parts of the country), and 92 packets of seeds; to Great Britain, 910 plants, and 45 packets of seeds; to the Continent of Europe, 85 plants, and 40 packets of seeds; to St. Helena, 150 plants; to the Cape of Good Hope, 1 packet of seeds; to China, 150 plants; to Canada, 14 plants; to Australia, 2 packets of seeds; to India, 1 packet of seeds.

There have been received during the year 1,477 plants, and 247 packets of seeds from 41 donors.

Herbarium and Museum. — The Herbarium and Museum have lost during the year the advantage of the devoted care of Mr. John Robinson, who has been called to other scientific duties. Mr. Robinson has had charge of these departments of the Arboretum from their beginning, and their excellent condition and efficient working-order are due to his labors. Mr. Charles E. Faxon has assumed the duties performed by Mr. Robinson.

Routine work has been continued during the year upon the Herbarium, which has received several important additions. The accessions of dried plants, woods, fruits, &c., numbering upwards of 700, have been received from 34 donors. Specimens of rare North American trees, principally Oaks and *Coniferæ*, to the number of 790, have been distributed during the year to 23 individuals and Institutions in the United States and Europe.

During the year an English translation of the Comte de Cars Treatise upon the Pruning of Forest Trees has been prepared at the Arboretum, and published by the Trustees of the Massachusetts Society for Promoting Agriculture. During the last three years the Director has been actively engaged in studying the forests of the United States, and the economic value of North American woods, for the purpose of preparing a report upon this subject to be published as a Special Report of the 10th Census. Twenty Forestry Bulletins, generally accompanied by maps illustrating the forests of different parts of the country and containing some of the results of this investigation, have been published by the Department of the Interior during the year. The final report is nearly completed, and will probably appear during the next academic year.

Mr. Faxon has begun a set of detailed botanical drawings of the trees of the United States, to illustrate a new North American Sylva, which the Director has undertaken to prepare under the auspices of the United States Government. A set of colored drawings of the flowers and fruits of North American trees has also been commenced during the year to illustrate the very important Jesup collection of American forest products, which has been gathered under the general supervision of the Director of the Arboretum for the American Museum of Natural History at New York.

The Museum and Herbarium still find temporary accommodation in the Dwight House, Warren St., Brookline.

C. S. SARGENT, *Director*.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE: —

DURING the past year the corner-piece of the Museum has been plastered, and some of the rooms are already occupied. This part of the building can be completed in such time that the Zoölogical and Geological laboratories will be ready for use at the opening of the next academic year.

The usual courses of instruction have been given at the Museum by Professors Whitney, Hagen, James, Farlow, and Faxon, and by Messrs. Mark, Davis, and Wadsworth.

For the details of this instruction and that in charge of Professor Whitney, I would refer to their several reports.

Two of the assistants of the Museum and two advanced students spent the greater part of the summer at my Newport laboratory. The former devoted their time principally to embryological studies of annelids, fishes, and polyps. The collections sent for study to Professors Verrill, Smith, and Mackintosh have been returned by them.

About eight hundred volumes have been added to the Library during the past year. A special list of the Museum publications is given to Appendix A of this Report; they are somewhat more extensive and numerous than has usually been the case, consisting of twelve numbers of the Bulletins, and of two numbers of the Memoirs. The publications issued elsewhere by several specialists, based mainly upon Museum materials, are mentioned in the special Reports of the Assistants of the Museum.

The publication of the preliminary Reports on the "Blake" collections has made excellent progress during the past year. There now remain unfinished of these only those upon the Fishes, Halcyonoids, Foraminifera, Ostracoids, Nemerteans, and some minor groups, as well as the Report on the bottoms. It has been decided to publish only the final Reports of the fishes of the east coast and of the Holothurians. That on the fishes will be published in connection with the United States Fish Commission, and include many species of shallower waters, first brought to light by the dredgings of the "Fish Hawk." Professor G. B. Goode and Dr. Bean have already prepared the greater part of this Report. Dr. H. Theel, of Stockholm, who has undertaken to work up the Holothurians, hopes next spring to transmit his final Report to the Royal Swedish Academy of Stockholm, where it is to be published. Professor Verrill has completed the examination of the east coast Halcyonarians and Actinariæ, and is preparing a Report of these and of those of the Caribbean and Gulf of Mexico for the Museum Bulletin. Work is progressing favorably on the other Reports. I have myself nearly completed Part I. of the final Report on the Echini, twenty plates are already on stone, and the remaining plates are well advanced. Concerning the results of the explorations of the Tortugas, undertaken in 1881 under the auspices of the United States Coast Survey, I am preparing for the Museum Memoirs a monograph on the Pòrpitidæ and Vellidæ of the Gulf Stream. The twelve plates to accompany this Memoir are completed. A second memoir on the structure of the Tortugas, and the distribution of the corals forming that part of the Florida Reefs, is also nearly completed. It will be illustrated by two maps and two plates, representing sections of the reef.

Mr. W. H. Dall is now engaged in preparing the final report on the "Blake" mollusca. His preliminary Report on the mollusca collected by the United States Coast Survey Steamer "Blake" has been issued in parts from July to December, 1881. Bull. M. C. Z. IX. No 2; pp. 111.

Mr. P. H. Carpenter has concluded his preliminary Report on the Comatulæ of the "Blake." It was published in October, 1881. Bull. M. C. Z. IX. No. 4; pp. 18. The crinoids of the "Blake" collection, which had been placed in the hands of the late Sir Wyville Thomson for determination, to be worked up in connection with the "Challenger" material, have been transferred by Mr. John Murray, of the "Challenger" office, to Mr. Carpenter. Mr. Carpenter proposes in connection with his father, Dr. W. B. Carpenter, to work out as fully as practicable the minute anatomy of Pentacrinus, for which the material collected by the "Blake" is quite extensive. In addition to the Pentacrinus material, our specimens of Holopus were also placed in his hands. Mr. Carpenter is now preparing a preliminary report on this part of the "Blake" collection. During the spring, Professor S. I. Smith has completed his Report on the Crustacea collected by the "Blake" off the Atlantic coast of the United States, during the summer of 1880. We are under great obligations to Professor Smith, not only for the masterly manner in which he has accomplished his task, but also for his promptness in writing this ɔreparing the excellent plates which accompany his ɔfessor Smith's Report was published in June, 1882. Z. X. No. 1; pp. 108, pl. 16.

Fewkes, who accompanied me as assistant to the ring the winter of 1881, has written a report on es we collected while carrying on explorations of the nder the auspices of the United States Coast Sur- M. C. Z. IX. No. 7; pp. 40, pl. 7. April, 1882.

es has also worked up some of the results of his ne jelly-fishes of the New England coast, carried on atory at Newport. Bull. M. C. Z. IX. No. 8; pp. 20, l, 1882.

publications of the Museum issued during the past ar are: —

ons upon the species of the genus Partula, by Dr. W. . Bull. M. C. Z. IX. No. 5; pp. 26, 2 pl. The collec- species of the genus Partula, made by Mr. Garrett for , forms a large part of the material placed at the com- r. Hartman.

emoirs, Part II. of Vol. VII. No. 2, — the climatic later geological times, — has been published by Pro- Whitney. Memoirs M. C. Z. VII. No. 2; Part II.; 4. March, 1882. The concluding part of this memoir anced.

eological Series Vol. VII. there have been issued No. ssor Lesquereux, on recent additions to the collections ants of the Museum, and No. 7 by Mr. Wolff, on the at Quincy, Mass.

nd part of the sixth volume of the Bulletin has been completing that volume. It contains an important Dr. E. L. Mark, on the maturation, fecundation, and on of Limax campestris; 5 pl., pp. 552. Besides a iew of what is known of the same phenomena in other the animal kingdom, based upon his own researches on lt subject, Dr. Mark has added an exhaustive bibli-

also undertaken, in connection with Professor Faxon Iark, to issue in the Museum Memoirs a "Selection ryological Monographs," which will contain 4to illus- mpiled from monographs scattered through innumerable scientific transactions and periodicals, and serve as an atlas to accompany any text-book on Embryology, such as Kölliker, Balbiani, Balfour, etc. Such a publication will, I hope, be found most useful to students and teachers. The 4to illustrations will be accompanied by a carefully prepared description of the plates, and an 8vo bibliographical list. The 4to illustrations and the bibliographical lists will be issued in parts limited to special groups of the animal kingdom.

The first part of the illustrations "Crustacea," has been prepared by Professor Faxon, and was published during this summer. Mem. M. C. Z. IX. No. 1; 14 pl., with an explanation of the Plates, June, 1882. Professor Faxon also prepared the Bibliography to accompany the Crustacea; it was published in March, 1882. Bull. M. C. Z. IX. No. 6; pp. 53. I have myself prepared the Bibliography of the Echinoderms. This was published in August, 1882. Bull. M. C. Z. X. No. 2, pp. 30, and I hope to finish the selection of the illustrations for the Echinoderms in time to issue the second part during this winter. Several of the plates of the acalephs and polyps are finished. I shall have the assistance of Dr. Fewkes in completing the preparation of this part. Professor A. S. Packard, Jr., has consented to take charge of the part relating to insects.

Other memoirs have also been prepared by the officers of the Museum and published elsewhere. They will be found mentioned in the reports of the special departments. I may mention specially the final Report on the Ophiuridæ of the "Challenger" expedition by Mr. Theodore Lyman, forming a part of Vol. IV. of the Zoölogical Results of the "Challenger." The preliminary Reports in the "Comptes Rendus" of some of the Crustacea collected by the "Blake" by Professor Alphonse Milne-Edwards, I have myself published in the Proc. Am. Acad. XVII; pp. 271–302, 20 pl. July, 1882. Part III. of the Young Stages of Osseous Fishes.

The late Professor F. M. Balfour has published, in connection with Mr. Parker, in the Proceedings of the Royal Society, a preliminary account of the Embryology of Lepidosteus based upon the material sent him from our Museum. Professor Mackintosh has completed his examination of the large series of sections of spines of sea-urchins sent him by the Museum. His Report has been sent for publication in the Memoirs of the Royal Irish Academy of Dublin.

The arrangement of the new rooms which have become available for exhibition and for storage has made excellent progress. All the material temporarily stored in the exhibition rooms has at last been removed and distributed to its final position, so that we may now hope within reasonable time to open all our Zoölogical Exhibition Rooms to the public, even should they not exhibit all the specimens we expect to place in them.

The greater part of the gallery of the Systematic Collection of Mollusks has been arranged, and Messrs. Hamlin and Hyatt hope to finish the work on the Mollusks during the coming year. The Systematic Collection of Fishes is now on exhibition and comprises the typical forms of the recent bony fishes, of the Selachians and of the Ganoids. It only remains now to intercalate the blanks and many of the fossil forms to complete this room.

The Systematic Collection of Birds is undergoing its final arrangement. A large part of the faunal collections intended for the Indian and Australian rooms has been placed in their exhibition cases, so that these rooms also can probably be open to the public during the coming winter. Fair progress has likewise been made in the African faunal collection. The skeletons of the reptiles, fishes, birds, and mammals, have been placed in the storage rooms destined for their use. The workroom containing the corals, polyps, echinoderms and sponges has been partially occupied, and Mr. Fewkes has arranged in the Systematic Room of Radiates a selected collection of Alcyonoids.

Mr. Garman has continued the explorations made by him during the two previous years, and has brought together an enormous collection of mammalian remains, — one of the finest, indeed, ever brought from the West. The thanks of the Museum are specially due to Dr. McGillicuddy of the Pine Ridge Indian Agency for the assistance he has given to Mr. Garman, and for his interest in his behalf.

Professor A. Lakes has continued to send fossil plants from Colorado to the Museum; they have as formerly been carefully identified by Professor Lesquereux.

The past winter Mr. Sternberg spent in Texas collecting fossil vertebrates from the permian. His collections have reached Cambridge safely; we are indebted to Major Henry of the 19th Cavalry, the Commander of Fort Sill, for the assistance he rendered to Mr. Sternberg while at work in his district. Later in the season Mr. Sternberg returned to Kansas, where he is still engaged in making collections for the Museum.

I have specially to thank the Secretary of War, the Hon. R. T. Lincoln, and the Secretary of the Treasury, the Hon. H. M. Teller, for the letters of introduction they were kind enough to send to Messrs. Sternberg and Garman for use in the Territories they explored.

Major Powell, the Director of the United States Geological Survey, kindly allowed the Museum the privilege of sending a collector under certain restrictions with the expedition sent by the survey in charge of Mr. C. D. Walcott to collect palæozoic fossils. It will of course be of great importance to the Museum, in view of our recent acquisitions, that we should have as full a representation as possible of the Western palæozoic fossils.

Mr. Fewkes was sent by the Museum to examine the Bermudas, in hopes of finding it a suitable and accessible locality for studying the surface Fauna of the Gulf Stream. He is preparing a report of his expedition for the Bulletin.

Dr. Hagen spent the greater part of the summer on the line of the Northern Pacific Railroad making an entomological survey for the Northern Pacific Transcontinental Company. He collected during his trip a large number of insects from localities as yet little visited by naturalists.

Large accessions for the faunal collections have been purchased from Professor Ward. In addition to these purchases, we have also received in exchange or as gifts a number of collections mentioned in the special Reports.

During the past year the accessions to our invertebrate palæontological collections have been most important. The Museum has purchased from Mr. E. Haeberlein a large collection of Solenhofen fossils, the duplicate of a collection purchased some time ago from him by the British Museum; though, of course, it did not contain its greatest treasure, the Archeopteryx. But by far the most valuable accession we have received during the past year is the collection of Silurian fossils of Bohemia, brought together by the late J. M. von Schary, which has been purchased from his heirs. This collection is of the greatest value to American palæontologists, as it will give us the means of comparing the types of the great collections which have formed the basis of the works of Barrande and of Hall. Some idea of the magnitude of ı may be formed from the fact that it contains over mens; of these probably two thirds of the collec- than 1231 species, representing 157 genera, are

collection was packed by Professor Hamlin, who was ı the Museum on purpose to secure it. To Profes- we are under the greatest obligation for his services ıt the negotiations which ended in the purchase of he Schary collection, taken in connection with the ɔught together from American localities, now makes of palæozoic fossil invertebrates one of the finest

collections purchased in Europe, I may also mention n of green-sand fossils from Cambridge; a collection from the upper Cretaceous of the Lebanon, Syria; ollection of Devonian fishes from Cromarty, Scot- few specimens from the Mountain Limestone of ınd.

ALEXANDER AGASSIZ, *Curator.*

APPENDIX.

I.

To the President and Overseers of Harvard University.

Gentlemen, — Would you accept the sum of fifty thousand dollars for the purpose of providing such medical education for women as will entitle them to the degree of Doctor of Medicine from your University?

This sum to be held by you in trust, and the interest of the same to be added to the principal until the income of the fund can be used for such medical education of women.

If such an arrangement cannot be made within ten years, the fund to be returned to the donors.

(Signed)

Marie E. Zakrzewska, M.D., } Boston.
Lucy E. Sewall, M.D., } Boston.
Helen Morton, M.D., } Boston.
Emily Blackwell, M.D., } New York.
Mary Putnam Jacobi, M.D., } New York.
Elizabeth M. Cushier, M.D., } New York.
Eliza M. Mosher, M.D., South Framingham.
C. Annette Buckel, M.D., San Francisco.
Alice M. Bennett, M.D., Norristown, Pa.

By Emma L. Call, M.D.,
Secretary of N. E. Hospital Medical Society.

151 Boylston Street, Boston.

II.

At a special meeting of the Faculty on April 8, 1882, present 16 members.

1. Whereas the committee of the Medical Faculty appointed to confer with a committee of the Overseers have laid before the Faculty a request of the committee of the Overseers that they be furnished with the reasons that have guided the Faculty in adopting the following vote, viz.: —

"Voted, that if the President and Fellows have a desire to be informed of the present views of the Medical Faculty upon the question of female medical education in the University, the latter would respectfully state that in their opinion it is not advisable that the President and Fellows should open a course of medical study to women under the auspices of the University."

2. The Medical Faculty would say, in reply, that many of the various reasons which have influenced them in passing this vote are already to be found in the abundant and accessible literature of the subject of female medical education. It is the belief of the Medical Faculty that the Overseers do not desire now to exact from them an extended recapitulation of what has already been said upon this subject.

3. Further reasons have been furnished by their committee to the committee of the Overseers at their meeting of conference.

4. Finally, the Medical Faculty would record their opinion as follows:—

Voted, that the fact that the Medical Faculty is strongly adverse to undertaking female medical education would be, in their belief, of itself, fatal to the success of an attempt in that direction.

5. Voted, that female medical education cannot be undertaken in the Medical School without a serious risk of detriment to the interests of the medical education now given to men.

This reply was unanimously adopted, except that two votes were cast against the resolution numbered 5.

III.

The following list gives an approximate statement of money paid for lands and buildings for University uses since Sept. 1, 1869, including present contracts and the proposed physical laboratory. The items in heavy-faced type were gifts, or built with money given; the other items were paid for by the President and Fellows. Italic figures distinguish the items on which there is at present some income, the aggregate of these items being $ 510,528.44. All the other sums are unproductive.

1869–70.	Harvard and Massachusetts Halls, remodelled		$19,966.87
1869–72.	Land near the Observatory		10,480.44 *3,000.00*
1869–71.	Marsh lands	**In Brighton**	12,000.00
		For boat-house	1,080.00
		Sundry	902.12
1869–70.	Jarvis Field (contribution towards cost of)		15,000.00
"	**Thayer Hall**		*_100,000.00_
1870–71.	Holyoke House		*120,470.97*
"	" "	Party wall, 1873–74	*2,374.15*
"	" "	Iron stair-case, 1876–78	*3,119.40*
"	College House, story added		*20,397.76*

1870–71.	Holmes estate **Gifts, 24,500** 30,500 $55,000	48,000.00 *7,000.00*
“	**Botanical laboratory and lecture-room**	*15,000.00
“	Medical College. **Gift 2,500**	*7,000.00
“	Dental School	15,000.00
1870–72.	**Bussey Buildings**	59,941.01
1871–72.	Boylston Hall, roof story added	13,310.00
“	“ “ fire-walls and cases	*3,500.00
“	**Matthews Hall**	**113,000.00*
“	**Weld Hall**	**87,000.00*
1871–73.	Scientific School, remodelled	18,032.71
“	Moving Dane Hall and the Bursar's Office	9,120.24
1872–73.	**Appleton Chapel.** Galleries and decoration	15,359.62
“	**Bussey water-supply and sheds**	4,511.83
1873–74.	Brick and stone walks in the Yard	4,847.33
1873–75.	Dining-Hall. Items paid by the Corporation	*5,000.00
1874–75.	Hospital	3,502.85
“	Advances to Dining-Hall Association	*48,219.75*
“	Boat-house	*2,000.00*
1869–76.	**Memorial Hall**	368,980.90
1875–78.	Gore Hall extension	89,012.68
1876–77.	Boat-house	*3,946.41*
“	Delta fence	3,990.00
1876–82.	**Peabody Museum** (building and cases)	73,507.74
1878–79.	**Hemenway Gymnasium**	*103,000.00
“	**Herbarium improvements**	4,500.00
1878–80.	**Sever Hall**	117,460.32
1880–81.	Morse estate	16,873.00
1880–82.	**Gore Hall**, improvement of cellar	2,897.64
1869–82.	**Museum of Zoölogy**, enlargements and cases	*200,000.00
1881–83.	**Medical School**, land and building (present contract and extras)	*285,000.00
1882–83.	**Law School** (present contract for)	*135,000.00
1883–84.	**Physical Laboratory** (gift for)	*115,000.00
	Total	$2,307,305.92

* Not exact.

IV.

SUMMARY OF STUDENTS IN THE UNIVERSITY AT THE BEGINNING OF THE ACADEMIC YEAR 1881-82.

College,		
Seniors	182	
Juniors	207	
Sophomores	217	
Freshmen	217	
		823
Unmatriculated Students		34
Lawrence Scientific School		30
Bussey Institution		5
Dental School		21
Medical School		241
Law School		151
Divinity School		29
Candidates for the degrees of A.M., Ph.D., and S.D.		41
Holders of Fellowships		7
Resident Graduates not Candidates for a Degree		3
		1385

Persons who attended the Summer Courses in Science in 1882.

Chemistry	33

Number of Certificates issued to Women in 1882.

Preliminary Examination (Old Method)	2
Advanced Examination (Old Method)	2
Final Examination (New Method)	5
	9

V.

ACADEMIC HONORS FOR THE YEAR 1881-82.

COMMENCEMENT, JUNE 28, 1882.

Orations.

George Lyman Kittredge,
Frank Nelson Cole,
Albert French Lane,
Arthur Prescott Lothrop,
George Morey Richardson,
William Cushing Wait,
Russell Whitman,
John Whiting Mason,
Frederick Russell Burton,
Owen Wister.

Dissertations.

Joseph Henry Beale,
Thomas William Ludlow,
Franklin Arthur Dakin,
Charles Hallam Keep,
Frank Gaylord Cook,
William Harrison Dunbar,
William Lowell Putnam,
Asaph Hall,
Homer Gage,
George Washington Dickerman,
William Boyd Fiske,
Charles Moen Rice,
Lucien Moore Robinson,
John Eliot Bullard,
Alfred Marston Allen,
Roland Thaxter,
George Lowell Mayberry,
Frederic Atherton Fernald,
Albert Andrew Howard,
Luther Stetson Anderson,
Charles Henry Goldthwaite,
William Hobbs Manning,
William Jones,
Godfrey Lowell Cabot,
William Henry Burnham,
Philip Moen Washburn,
Edward Knights Stevens,
Sam Henry Morrill,
Herbert Grafton Woodworth.

Disquisitions.

Richards Merry Bradley,
Ivan Nikolayevitsh Panin,
Robert Luce,
Joseph Ruggles Worcester,
John Walter Perkins,
Frederic Clinton Woodbury,
John Plumer Lyons,
Joseph Payson Clark,
John McGaw Foster,
Clarence Bancroft,
Charles Armstrong Snow,
Charles Eliot,
Alfred Eugene Miles,
John McGregor Cochrane,
George Herbert Eaton,
George William Perkins,
Arthur Messinger Comey,
Frederic Norton Goddard,
Montgomery Adams Crockett,
Benjamin Rufus Kittredge,
Charles Denston Dickey,
William Henry Danforth,
Henry Winthrop Hardon,
Joseph Austin Coolidge,
James Woods Babcock,
Alexander Boyd,
Charles Edgar Boynton,
Wendell Phillips Davis,
Frank Edward Fuller,
Horace Emmet Smith,
Robert Cumming,
Charles Green Rockwood Jennings,
William Joseph Rushmore,
Frederic Mather Stone,
George Trumbull Hartshorn,
James Jay Greenough,
Edwards Cheney,
Charles Townsend Copeland,
Harry Cormerais French,
George Bradford Dunbar,
McLaurin Jameson Pickering,
Charles Walker Andrews,
Richard Delaney,
Chambers Baird,
Harold Marsh Sewall,
Guy Waring,
Charles Francis Cutler,
George Francis Barlow.

Honors at Graduation.

In Classics.

George Lyman Kittredge,	Highest Honors.
George Morey Richardson,	Do.
Franklin Arthur Dakin,	Honors.
Charles Henry Goldthwaite,	Do.
Albert Andrew Howard,	Do.
William Jones,	Do.
Albert French Lane,	Do.
William Hobbs Manning,	Do.
Russell Whitman,	Do.
Herbert Grafton Woodworth,	Do.

In Philosophy.

Russell Whitman,	Highest Honors.
William Henry Burnham,	Honors.

In History.

Arthur Prescott Lothrop,	Highest Honors.
William Cushing Wait,	Do.
Edmund Allen Whitman, A.B.,	Do.
Alfred Marston Allen,	Honors.
Frank Gaylord Cook,	Do.
Homer Gage,	Do.
Philip Moen Washburn,	Do.

In Mathematics.

Frank Nelson Cole,	Highest Honors.
John Whiting Mason,	Do.
Asaph Hall,	Honors.
William Lowell Putnam,	Do.

In Chemistry.

Godfrey Lowell Cabot,	Honors.
Charles Robert Sanger, A.B.,	Do.
Edward Knights Stevens,	Do.

In Music.

Frederick Henry Burton,	Highest Honors.
Owen Wister,	Do.
Sam Henry Morrill,	Honors.

Honorable Mention at Graduation.

Alfred Marston Allen. *Political Economy; History.*
Luther Stetson Anderson. *German; French.*
Charles Walker Andrews. *History.*
James Woods Babcock. *Natural History.*
Chambers Baird. *History.*
Clarence Bancroft. *Chemistry.*
George Francis Barlow. *Philosophy.*
Joseph Henry Beale. *Music; Mathematics; English Composition; Greek.*
Alexander Boyd. *History.*
Charles Edgar Boynton. *Chemistry; History.*
Richards Merry Bradley. *Political Economy; History.*
John Eliot Bullard. *Philosophy.*
William Henry Burnham. *Philosophy; English Composition.*
Frederick Russell Burton. *Music.*
Godfrey Lowell Cabot. *Chemistry.*
Edwards Cheney. *Music.*
Joseph Payson Clark. *English.*
Frank Nelson Cole. *Mathematics.*
Arthur Messinger Comey. *Chemistry.*
Frank Gaylord Cook. *Philosophy; History; Greek; Political Economy.*
Joseph Austin Coolidge. *German.*
Charles Townsend Copeland. *History.*
Montgomery Adams Crockett. *Natural History.*
Robert Cumming. *Music.*
Charles Francis Cutler. *History.*
Franklin Arthur Dakin. *Greek; Latin; English Composition.*
William Henry Danforth. *Natural History.*
Wendell Phillips Davis. *Music; German.*
Richard Delaney. *History.*
George Washington Dickerman. *Philosophy; Greek.*
Charles Denston Dickey. *History.*
George Bradford Dunbar. *Natural History.*
William Harrison Dunbar. *History; Political Economy.*
George Herbert Eaton. *Philosophy.*
Frederic Atherton Fernald. *Chemistry.*
Burton Monroe Firman. *Philosophy; English Composition.*
William Boyd Fiske. *Natural History; Chemistry.*
John McGaw Foster. *English Composition.*
Harry Cormerais French. *Natural History.*
Frank Edward Fuller. *English; English Composition.*
Homer Gage. *History.*
Frederic Norton Goddard. *French.*
Charles Henry Goldthwaite. *Greek; Latin.*
James Jay Greenough. *Mathematics; Physics.*
Asaph Hall. *Mathematics.*

Henry Winthrop Hardon. *Greek.*
George Trumbull Hartshorn. *Chemistry.*
Albert Andrew Howard. *Greek; Latin.*
Henry Mascarene Hubbard. *Natural History.*
Charles Green Rockwood Jennings. *Chemistry.*
William Jones. *Greek; Latin.*
Benjamin Rufus Kittredge. *History.*
George Lyman Kittredge. *Greek; Latin; English; English Composition.*
Albert French Lane. *Greek; Latin; English Composition.*
Heyward Gibbons Leavitt. *Chemistry.*
Arthur Prescott Lothrop. *Political Economy; History.*
Robert Luce. *History; Political Economy; English Composition.*
Thomas William Ludlow. *Greek.*
Walter Irving McCoy. *Philosophy.*
William Hobbs Manning. *Greek; Latin; History.*
John Whiting Mason. *Mathematics.*
George Lowell Mayberry. *Physics; Philosophy.*
Alfred Eugene Miles. *Philosophy.*
Sam Henry Morrill. *Music.*
Edmund Seahon Perin. *Natural History.*
George William Perkins. *Natural History.*
John Walter Perkins. *Natural History; Political Economy.*
McLaurin Jameson Pickering. *History.*
William Lowell Putnam. *Mathematics.*
Charles Moen Rice. *Mathematics.*
George Morey Richardson. *Greek; Latin.*
Lucien Moore Robinson. *Physics; History.*
William Joseph Rushmore. *History; English Composition.*
Harold Marsh Sewall. *History; English Composition.*
Horace Emmet Smith. *History.*
Charles Armstrong Snow. *Greek; Philosophy.*
Edward Knights Stevens. *Chemistry.*
Frederic Mather Stone. *Greek.*
Roland Thaxter. *Natural History; English Composition.*
William Cushing Wait. *Political Economy; History.*
Guy Waring. *Natural History.*
Philip Moen Washburn. *History.*
Russell Whitman. *Philosophy; Greek; Latin.*
Owen Wister. *Music; Philosophy; English Composition.*
Frederick Clinton Woodbury. *Natural History.*
Herbert Grafton Woodworth. *Greek.*
Joseph Ruggles Worcester. *Mathematics.*

SECOND-YEAR HONORS.

In Classics.

Juniors:

Edwin Guthrie McInnes,	Highest Honors.
Walter Elijah Damon,	Honors.
Charles Frederick Nirdlinger,	Do.
Joseph Henry Sheffield,	Do.
Horace Elmer Sprague,	Do.

Sophomores:

Josiah Bridge,	Highest Honors.
George William Brown,	Do.
William Wallace Fenn,	Do.
William Amory Gardner,	Do.
George Andrew Stewart,	Do.
Henry Elbert Barnes,	Honors.
Heinrich Conrad Bierwirth,	Do.
Ernest Lee Conant,	Do.
Theodore Longfellow Frothingham,	Do.
William Halsey Garrison,	Do.
Philip Henry Goepp,	Do.
Charles Theodore Greve,	Do.
Eugene Hamlin Hatch,	Do.
Edward Andress Hibbard,	Do.
John Andrew Noonan,	Do.
Albert Sanborn Perkins,	Do.
Edwin Martin Pickop,	Do.
Lawrence Eugene Sexton,	Do.
Correa Moylan Walsh,	Do.

In Mathematics.

Juniors:

Osgood Putnam,	Honors.

Sophomores:

Joseph Arthur Willis Goodspeed,	Highest Honors.
George Herbert Perkins,	Do.
George William Sawin,	Do.
Romeo Green Brown,	Honors.

VI.

PRIZES.

DETURS.

THE following students received books, called "Deturs," from the foundation of Edward Hopkins, for excellence in scholarship : —

Freshmen of 1880–81.

Clift Rogers Clapp.
Ernest Lee Conant.
Allen Curtis.
Edward Wheeler Frost.
Joseph Arthur Willis Goodspeed.

Freshmen of 1881–82.

Victor Clifton Alderson.
William Francis Bacon.
Hugh Henry Brogan.
Allen Howard Chamberlain.
Arthur Deloraine Corey.
George Arthur Craigin.
George Fauntleroy Davidson.
Bancroft Gherardi Davis.
Theodore Dunham.
Edward Tyler Edgerly.
Samuel Lynde Foster.
John Hays Gardiner.
John McGregor Goodale.
Robert Stetson Gorham.
Otto Rheinhard Hansen.
Charles Mather Harrington.
Joseph Adna Hill.
John Francis Holland.
Lawrence Litchfield.
Joseph Mansfield Long.
Daniel William Lothman.
Theophilus Huntington Root.
Edward Irving Smith.
William Christopher Smith.
Abner Ernest Strong.
Ernest Lawrence Thayer.
Arthur Gordon Webster.
Charles Alexander Whittemore.
Edward Blake Young.

BOWDOIN PRIZES.

Frank Bolles, of the Class of 1882 in the Law School.
Robert Luce, of the Class of 1882.
George Lyman Kittredge, of the Class of 1882.
Osgood Putnam, of the Class of 1883.

BOYLSTON PRIZES FOR ELOCUTION.

First Prizes.

Burton Monroe Firman, of the Class of 1882.
Sherman Hoar, of the Class of 1882.

Second Prizes.

George Herbert Eaton, of the Class of 1882.
George Hyde Page, of the Class of 1883.
Osgood Putnam, of the Class of 1883.

LEE PRIZES FOR READING.

Sophomores.

George Read Nutter.
Milton Jerome Stone.
Edward Franklin Weld.
Lucius Junius Henderson.
Edward Blake Young.

Freshmen.

Howard Augustus Taylor, from Wilson & Kellogg's School.
Odin Barnes Roberts, from the Chauncy Hall School.
Crosby Church Whitman, from Adams Academy.
Edward Everett Hamlin, from the Roxbury Latin School.
Edward Everett Rose, from the Chauncy Hall School.
George Edwin Howes, from the Boston Latin School.

VII.

DEGREES.

Bachelors of Arts of the Class of 1882	177
Bachelors of Arts of former Classes	5
Bachelors of Divinity	5
Bachelors of Laws	23
Doctors of Medicine	86
Doctors of Dental Medicine	3
Civil Engineer	1
Bachelor of Science	1
Bachelor of Agriculture	1
Doctor of Science	1
Masters of Arts	7

HONORARY DEGREES.

Masters of Arts.

Horatio Hale.
Henry Lee Higginson.

Doctors of Laws.

Henry Jacob Bigelow.
William Crowninshield Endicott.
Marcus Morton.
Charles O'Conor.

VIII.

COMMITTEES OF THE OVERSEERS, FOR 1882.

To visit the University.

President of the Board of Overseers.
His Excellency the Governor.
His Honor the Lieutenant-Governor.
The President of the Senate.
The Speaker of the House of Representatives.
The Secretary of the Board of Education.
The Secretary of the Board of Overseers.
The Chairman of each of the Visiting Committees.

To visit the College. — On Government.

Edwin P. Seaver.
Edward E. Hale.
Theodore Lyman.
Francis G. Peabody.
Henry Lee.
Charles R. Codman.
John Noble.
J. T. G. Nichols.
Waldo Higginson.
Le Baron Russell.
Moorfield Storey.
John Fiske.
James E. Cabot.
Richard M. Hodges.
Oliver W. Holmes, Jr.

To visit the College. — On Languages.

Le Baron Russell,
Robert D. Smith.
Thomas W. Higginson.
John Noble.
Roger Wolcott.
Arthur Dexter.
W. B. Swett.
Charles P. Curtis.
Robert E. Babson.
J. B. Torricelli.
Edward Edes.
Carl Wolff.
Lucius H. Buckingham.
Octavius B. Frothingham.
Thomas J. Cushing.
Francis A. Waterhouse.

To visit the College. — On Rhetoric and English Literature.

Moorfield Storey.
John T. Morse, Jr.
George B. Chase.
Roger Wolcott.
Henry W. Foote.
Charles P. Curtis.

To visit the College. — On History and Political Science.

John Fiske.
John T. Morse, Jr.
Alexander McKenzie.
Thomas W. Higginson.
Henry C. Lodge.
Edward G. Porter.
John O. Means.
James H. Means.
Russell Gray.
Abbott Lawrence.
Brooks Adams.
Edward Atkinson.

To visit the College. — On Philosophy.

James E. Cabot.
Alexander McKenzie.
Francis G. Peabody.
John Fiske.
Joseph B. Warner.
John O. Means.

To visit the College. — On Mathematics, Physics, and Chemistry.

Edwin P. Seaver.
Daniel B. Hagar.
William Watson.
George V. Leverett.
J. D. Runkle.
Percival Lowell.
David Sears.
Channing Whitaker.
Oliver Wadsworth.
Francis Blake, Jr.
Robert Amory.
Walter C. Cabot.

To visit the College. — On Natural History.

Richard M. Hodges.
Theodore Lyman.
George B. Bradford.
Henry Wheatland.
William H. Niles.
Thomas B. Curtis.

To visit the College. — On Fine Arts and Music.

Oliver W. Holmes, Jr.
Charles C. Perkins.
S. L. Thorndike.
John S. Dwight.
Arthur Dexter.
William F. Apthorp.
Charles A. Cummings.
Henry L. Higginson.
J. Francis Tuckerman.
Francis D. Millett.

To visit the Divinity School.

James F. Clarke.
Phillips Brooks.
Edward E. Hale.
Alexander McKenzie.
Edward H. Hall.
Adams Ayer.
Artemas B. Muzzey.
Franklin Johnson.
Waldo Higginson.
Henry W. Foote.
Charles F. Dole.
Thomas Hill.
Arthur Brooks.

To visit the Law School.

John Lowell.
Leverett Saltonstall.
George O. Shattuck.
Oliver W. Holmes, Jr.
William G. Russell.
Darwin E. Ware.
William C. Endicott.
Robert D. Smith.
Moorfield Storey.
Francis E. Parker.
Robert M. Morse, Jr.
Francis C. Barlow.
Peter B. Olney.
Charles C. Beaman, Jr.
Edmund Wetmore.

To visit the Scientific School, the Bussey Institution, the Peabody Museum of American Archaeology and Ethnology, and the Museum of Comparative Zoölogy.

Morrill Wyman.
Theodore Lyman.
R. M. Hodges.
Stephen Salisbury.
Edwin P. Seaver.
John O. Sargent.
Henry P. Kidder.
Benjamin S. Rotch.
Robert W. Hooper.
Gustavus Hay.
Channing Whitaker.
Charles O. Thompson.
T. J. Coolidge.
Alphonse Fteley.
Clemens Herschel.
Ernest W. Bowditch.
S. M. Felton.
William E. Worthen.
Thomas C. Clarke.

To visit the Medical School and Dental School.

Le Baron Russell.
Morrill Wyman.
Richard M. Hodges.
Samuel A. Green.
Joseph Sargent.
Frederic Winsor.
John G. Park.
George C. Shattuck.
Hall Curtis.
James L. Little.
Samuel L. Abbott.
Francis M. Weld.
Algernon Coolidge.
John C. Dalton.
Austin Flint.

To visit the Observatory.

James F. Clarke.
Charles R. Codman.
William Amory.
Amos A. Lawrence.
Francis G. Peabody.
J. Ingersoll Bowditch.
John C. Palfrey.
George I. Alden.
Robert Treat Paine.
J. R. Coolidge.
Robert C. Winthrop.
Charles F. Choate.
Alvan Clark.
Frederic O. Prince.
Augustus Lowell.
J. Montgomery Sears.
Simon Newcomb.

To visit the Library.

Phillips Brooks.
John Fiske.
John T. Morse, Jr.
John O. Sargent.
Francis G. Peabody.
Samuel A. Green.
William W. Greenough.
Charles A. Cutter.
George W. Wales.
Charles C. Smith.
Samuel S. Green.
Stephen Salisbury, Jr.
Samuel Eliot.
Delano A. Goddard.
Francis V. Balch.
Henry G. Denny.
Charles Deane.
Henry F. Jenks.
Mellen Chamberlain.
George Dexter.
John M. Brown.
Charles F. Adams, Jr.

To visit the Botanic Garden and Herbarium.

Leverett Saltonstall.
Fred L. Ames.
William Boott.
John Cummings.
William Gray, Jr.
Augustus Lowell.
H. H. Hunnewell.
J. Warren Merrill.
Francis A. Osborn.
John C. Phillips.
Henry P. Walcott.
Henry W. Sargent.
Henry C. Lodge.
J. Pierpont Morgan.
George Ellwanger.
Thomas Meehan.

On the Treasurer's Accounts.

Leverett Saltonstall.
John Lowell.
Henry P. Kidder.
Amos A. Lawrence.
Charles H. Parker.
Israel M. Spelman.
George B. Chase.

On Elections.

Henry W. Paine.
Moorfield Storey.
John Lowell.
William C. Endicott.
Leverett Saltonstall.

On Reports and Resolutions.

Robert D. Smith.
William C. Endicott.
Henry W. Paine.
William Amory.
Francis E. Parker.
Charles R. Codman.
Henry Lee.

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TREASURER'S STATEMENT.

SIGILLVM + ACADEMIÆ : HARVARDINÆ : IN : NOV : ANG :
CHRISTO ET ECCLESIÆ

1882.

TREASURER'S STATEMENT.

To the Board of Overseers of Harvard College:—

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending August 31, 1882, in the usual form.

The Funds separately invested, with the income thereof, are as follows: —

	Principal.	Income.
COLLEGE.		
Bowditch Scholarships (part of),		
$70,000, Massachusetts 5% Bonds, sold during the year, . .		1,681.95
Bassett Scholarships (part of),		
Mortgage, paid off during the year, ...		275.00
Pennoyer Scholarships (part of),		
Pennoyer Annuity in England, ...	4,444.44	277.50
Rumford Professorship (part of),		
French Rentes, ...	10,000.00	579.37
Jonathan Phillips Fund,		
Mortgage, ...	10,000.00	500.00
Daniel H. Peirce Fund (part of),		
Mortgage, ...	12,766.91	688.72
Samuel Ward's Gift,		
Ward's (Bumkin) Island, Boston Harbor, . . .	1,200.00	50.00
Botanic Garden Fund (part of),		
$17,000 New York Central R. R. Bonds, ...	17,000.00	1,020.00
LIBRARY.		
Charles Minot Fund (part of),		
$60,000, Buffalo, Bradford, & Pittsb. R. R. Bonds,	60,000.00	4,200.00
Ichabod Tucker Fund (part of),		
Policy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00
SCIENTIFIC SCHOOL.		
John B. Barringer Fund (part of),		
40 shares Schenectady Bank Stock, ...	2,200.00	200.00
Amounts carried forward, . . .	$122,611.35	$9,672.54

Amounts brought forward, ...	$122,611.35	$9,672.54

MUSEUM OF COMPARATIVE ZOÖLOGY.

Agassiz Memorial Fund (part of),		
Personal notes (endorsed), ...	25,006.69	1,482.94

OBSERVATORY.

Anonymous gift (now used to pay annuities),		
$1,000, Michigan South'n & No. Indiana R.R. Bond,	1,000.00	70.00
$2,000, Cincinnati Municipal Bonds, ...	2,000.00	140.00
$2,000 Minneapolis Municipal Bonds, ...	2,000.00	160.00
50 shares Pittsburg, Fort Wayne, & Chicago, R. R. Stock, ...	5,000.00	350.00

SPECIAL FUNDS.

Bussey Trust,		
Real Estate, ...	413,092.80	16,170.12
Robert Troup Paine Fund (accumulating),		
$22,500 Mass. 5% Bonds, ...	25,805.00	1,071.59
New Law School Professorship,		
Personal note, ...	90,000.00	2,250.00
	$686,515.84	$31,367.19

The other Funds of the College are invested as a whole. The general investments, with the income thereof, are as follows:—

Investments.	Principal, September 1, 1881.	Principal, August 31, 1882.	Income.
Notes, Mortgages, &c., ...	$711,103.74	$843,836.83	$45,168.20
Railroad Bonds and Premiums, . . .	972,532.48	1,040,885.85	56,797.39
Railroad Stock, ...	32,150.22	106,811.93	3,395.00
New Boston Coal Mining Co. Bonds,	9,000.00	9,000.00	700.00
Bank Stock, ...	63,964.00	63,964.00	4,548.07
Manufacturing Stock, ...	102,058.29	102,058.29	8,573.40
Real Estate, ...	1,396,073.30	1,396,523.30	77,289.00
Unoccupied Lands, ...	75,487.79	75,487.79	
Brattle Street Reversion, ...	1,000.00	1,000.00	
Advances to Scientific School, . . .	4,905.14	4,707.27	294.31
“ “ Dental School, ...	15,827.74	14,488.37	949.96
“ “ Bussey Trust, ...	40,566.13	40,566.13	2,028.31
“ “ Dining Hall Association,	37,232.16	36,232.16	2,233.93
“ “ Scudder's Catalogue, .	233.42	208.86	
“ “ Books, ...		29.36	
“ “ Chinese Subscription,	374.38		
“ for altering Appleton Chapel,	2,859.62	2,859.62	
“ “ repairing College Wharf,	411.88		8.12
Term Bills due Oct., 1882, ...	71,163.80	70,016.74	
Term Bills overdue, ...	2,259.56	2,367.01	
Cash in Suffolk National Bank, .	19,063.38	9,211.25	
Cash in hands of Bursar, ...	1,131.61	5,090.99	
Totals of general investments,	3,559,398.64	3,825,345.75	201,985.69
Totals of special investments,	674,021.61	686,515.84	31,367.19
Amounts, . . .	$4,233.420.25	$4,511,861.59	$233,352.88

During the year, $70,000 of Massachusetts bonds, belonging to the Bowditch Scholarship Fund, have been sold at an advance of $11,275 over their cost, and the gain has been credited to the capital of the Bowditch Scholarship Fund, the whole of which now shares in the "general investments." $217,000 of seven per cent railroad bonds have been sold at a premium of $39,567.50, which was a net gain of $10,487 upon their cost, but the whole premium has been credited to the account of "railroad bond premiums" to provide against any losses that may be made upon future sales. The same account has been charged with the premium on $236,000 of seven per cent railroad bonds bought, amounting to $35,325. The account of "railroad bond premiums" has been credited with $3340, which was taken from the interest received on $334,000 of seven per cent bonds held during the whole year, and with the difference between accrued interest repaid and that advanced during the year, amounting to $102.88. The sales and purchases of bonds were made to take advantage of changes in market prices from time to time, due to fluctuations both in the current rate of interest and in the demand for or supply of particular securities. The bonds bought yield upon their cost a net income one half of one per cent higher than the bonds sold, but they are all of a high class, and most of them provide for payment of both principal and interest in gold. All other changes in the investments of the University are accounted for by the receipts and payments hereinafter stated in detail.

The net income of the general investments ($201,985.69) has been divided at the rate of $5\frac{62}{100}$ per cent among the Funds to which they belong, except the Medical School and Law School Building Funds, which have received a special rate of four per cent on their balances during the period of construction. The balance of $208.97 has been placed to the credit of the University account.

The rate of income this year as compared with that for 1880–81 shows a gain of $\frac{26}{100}$ of one per cent, due chiefly to a higher average rate of interest upon temporary loans, and to less outlay proportionally upon repairs and improvements of productive real estate. For the year 1882–83 the rate of income is likely to be below five and a half per cent.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments: —

Interest on funds for		
University Salaries and Expenses,	$17,825.86	
College Expenses,	3,176.42	
Library,	1,344.92	
College Salaries,	28,280.98	
Gymnasium, and repairs on College buildings,	none.	
College Term bills,	162,983.04	
Sundry cash receipts,	7,571.16	
		221,182.38
Expended for		
University Salaries and Expenses,	$25,473.69	
College Expenses,	39,269.63	
Library Salaries and Expenses (not books),	20,137.21	
College Salaries,	137,059.27	
Gymnasium Expenses,	6,272.02	
Settlement of account for Chinese Instruction,	2,954.51	
Repairs and insurance on College Buildings not valued on Treasurer's books,	4,754.69	
		235,921.02
Balance, showing deficit for the year, which has been charged off to Stock Account,		$14,738.64

For the University, College, and Library accounts there have been considerable gains from tuition fees and rent of rooms, and a temporary exemption from heavy charges for repairs and improvements, but the ordinary expenses of carrying on the work as now laid out, together with a special charge of nearly $3,000 for the settlement of the account for Chinese instruction, which included the cost of sending to China the widow and children of the late Ko Kun-hua, have left a deficit for the year amounting to $14,738.64, which sum has been taken from the unrestricted capital of the University. This year, for the first time, a fair proportion of the expenses of the Gymnasium and of the Bursar's office have been charged to the Law, Divinity, and Scientific Schools. During the year 1882–83 the Corporation will be able to keep the expenses within the income, partly by cutting off outlays, but chiefly from the increase in the number of undergraduates.

For the Divinity School the income from the new endowments and an increase of receipts from tuition fees and rent of rooms, as well as from the Bussey Trust, have made a surplus of $2,819.41, in spite of a larger expenditure for salaries. For 1880–81 there was a surplus of $2,217.41.

For the Law School there is a surplus of $364.26, the income from the new Book Fund having allowed a larger outlay upon books, and an increase of income from the Bussey Trust having partly covered the new charges on account of the expenses of the Gymnasium and the Bursar's office. The salary of the new professor has been provided for from the interest upon the note given for the foundation of the new professorship. For 1880–81 there was a surplus of $675.77.

The Medical School has made a surplus of $7,843.92, partly due to a small gain in fees from students. For 1880–81 the surplus was $5,946.69.

For the Dental School there is a surplus of $1,339.37, due to a large increase in the number of students. This surplus has been used to reduce the debt of the School. For 1880–81 there was a surplus of $304.43.

For the Lawrence Scientific School there is a surplus of $197.87, which has been used to reduce the debt of the School. The number of students has been much smaller than last year, the large increase of numbers then reported having proved to be only temporary. For 1880–81 there was a surplus of $3,041.35. The sum of $4,652.06 from the income of the Agassiz Memorial Fund has been used to repay in part the notes given by Mr. Agassiz to the Memorial Fund for advances on account of the extension of the Museum building. Mr. Agassiz has continued to make very large private outlays for the benefit of the Museum.

In the Observatory the expenses have consumed all the subscriptions for current use received within the year and left a deficit of $1,172.67, which has been met out of the annual subscriptions paid in advance during the year 1878–79. For 1880–81 there was a deficit of $1,537.22.

For the Bussey Institution there is a surplus of $805.55, due to a larger income from the Bussey Trust and a reduction of salary payments. This surplus will be used for salaries during the ensuing year. For 1880–81 there was a deficit of $2,160.30.

The gross income from the Bussey stores has largely increased since last year, but heavy expenses have been incurred for repairs, leaving the gain of net income only a little over $2,000. For the year 1882–83 the net income is not likely to be much larger than during the past year, as considerable outlay for repairs must be made from the year's income.

During the year the name of the Graduates' Scholarship has been changed to that of the "Rogers Scholarship," in honor of Henry Bromfield Rogers, of the class of 1822, who founded the scholarship in the year 1869, and who now consents that his name be attached thereto; and the name of the Senior Exhibition has been changed to that of the "Palfrey Exhibition," in memory of the late John G. Palfrey, who founded the Exhibition in the year 1821. The name of the Massachusetts Fund for the Botanic Garden has been changed to that of the "Lowell Fund for a Botanic Garden," in honor of the late Judge Lowell, who mainly procured the original subscriptions, and in accordance with a provision made by the subscribers to the Fund for a change of its name under certain circumstances.

Gifts have been received during the year as follows:—

TO FORM NEW FUNDS OR INCREASE OLD ONES.

From Edward Russell, Esq., $125, to increase the scholarship founded by him.

From the administrator of Miss Martha C. Derby, $5000, to found a scholarship in the University.

From an anonymous friend, $90,000, as the foundation of a new professorship in the Law School.

From the executors of John Amory Lowell, $20,000, to be added to the Massachusetts Fund for the Botanic Garden; and $20,000, "three quarters of the income of which shall from time to time be applied to the purchase of books for the Library, and the other one quarter be added yearly to the principal."

From the executors of Charles Sumner, $17.20, as a final payment on account of the Sumner Book Fund.

Subscriptions for the increase of the Botanic Garden Fund, paid to Sept. 1, 1882, from

Alexander Agassiz,	$1000,	H. H. Hunnewell,	$1000.

Subscriptions for the endowment of a Physical Laboratory, paid to Sept. 1, 1882, from

A friend	$2000
A. Agassiz	5000
Sidney Bartlett	5000
Francis Blake	1000
Walter C. Cabot	1000
Geo. C. Clark	1000
Louis C. Clark	1000
Alex. Cochrane	$500
Wm. H. Forbes	1000
H. P. Kidder	2000
Arthur T. Lyman	500
Theodore Lyman	500
J. A. Rumrill	1000
P. H. Sears	500
	$22,000

Subscriptions for the further endowment of the Divinity School, paid to Sept. 1, 1882, from

Abbot, Prof. Ezra	$100.
Allen, Rev. Joseph H.	40.
Barrows, Rev. S. J.	33.34
Bixby, Rev. James T.	33.33
Bowditch, J. Ingersoll	200.
Brown, Rev. H. W.	10.
Eliot, Charles W.	100.
Everett, Prof. C. C.	100.
Fish, Rev. William H.	10.
Gilman, Rev. N. P.	$10.
Lee, Henry	300.
Leonard, Rev. George	25.
Lippitt, Henry	100.
Lombard, Rev. Charles P.	5.
Muzzey, Rev. A. B.	100.
Osgood, Rev. E. Q. S.	5.
Thayer, Rev. George A.	50.
Toy, Prof. C. H.	400.
	$1,621.67

Subscriptions to establish a fund of which the income shall be used for the purchase of books for the Law School, paid to Sept. 1, 1882, from

A senior member of the Bar	$5000
Beaman, C. C., Jr.	250
Belmont, August	500
Bonaparte, Charles J.	500
Brown, Addison	500
Cadwalader, J. L.	50
Carter, James C.	500
Choate, Charles F.	500
Choate, Joseph H.	500
Coolidge, D. H.	100
Coolidge, J. Randolph	250
Crocker, U. H.	100
Dexter, W. S.	100
Endicott, William, Jr.	1000
Fox, Austin G.	100
Gardiner, William H.	500
Gray, Russell	100
Hayes, Francis B.	500
Holmes, Artemas H.	100
Hubbard, C. E.	25
Keasbey, E. Q.	5
Kimball, David P.	250
Lilienthal, estate of Rev. Dr. Max	500
Loring, C. W.	250
Lowell, A. L.	50
Lowell, F. C.	25
Lowell, John	1000
Morse, Godfrey	25
Morse, John T.	200
Morse, R. M., Jr.	25
Myers, James J.	$25
Nickerson, George A.	500
Norcross, Grenville H.	100
Norcross, Otis	200
Norcross, Otis, Jr.	100
Palfrey, F. W.	50
Parker, F. E.	100
Parkman, Henry	50
Pierce, Henry L.	250
Pratt, Edward E.	100
Prichard, William M.	250
Putnam, George	500
Putnam, Henry W.	100
Roberts, George L.	100
Ropes, John C.	100
Russell, William G.	1000
Salisbury, Stephen	500
Sargent, J. O.	500

(Continued.)

Subscriptions for the Law School Book Fund (continued):

Sears, P. H.	500	Villard, Henry	5000
Shattuck, Geo. O.	1000	Wharton, W. F.	25
Storrow, James J.	50	Wigglesworth, George	100
Thayer, E. V. R.	100	Wolcott, J. Huntington	200
Thorndike, S. L.	100	Wolcott, Roger	100
Vaughan, William W.	25		
			$25,230

Subscriptions to be applied towards a fund for the endowment of the Dental School, paid to Sept. 1, 1882, from

Dr. George H. Ames	$20	Dr. George F. Grant	$20
Dr. F. E. Banfield	50	Dr. A. B. Jewell	20
Dr. A. G. Bouvé	20	Arthur T. Lyman	100
Dr. C. A. Brackett	100	Dr. H. C. Meriam	20
Dr. E. P. Bradbury	20	Dr. F. A. Merrill	20
Dr. E. C. Briggs	20	Dr. L. D. Shepard	20
Dr. T. H. Chandler	20	Dr. E. H. Smith	20
Dr. E. E. Frost	20	Dr. J. G. W. Werner	20
			$510

The sum of $5 received last year from Dr. S. S. Silva and entered as a gift for current use has since been transferred to this endowment fund for the Dental School.

GIFTS FOR IMMEDIATE USE.

From an anonymous friend $135,000 has been received for the erection of a new building for the Law School.

From Robert N. Toppan, Esq., $150, to be used as a prize to be awarded in 1882–83 on Political Science in the graduate department of the University.

From George W. Wales, Esq., $200, for books for the Library, in continuance of former gifts for the same purpose.

Subscriptions for the current expenses of the Observatory, paid to Sept. 1, 1882, from

Adams, Charles Francis	$100	Fay, R. S.	50
Ames, Fred. L.	100	Forbes, Mrs. J. M.	200
Beal, James H.	50	Forbes, J. M.	100
Bremer, John L.	100	Gardner, George	100
Brimmer, Martin	100	Gardner, John L.	100
Cabot, Walter C.	50	Grew, Henry S.	50
Choate, Charles F.	100	Hemenway, Mrs. A.	100
Coolidge, T. Jefferson	100	Higginson, George	100
Curtis, Charles P.	100	Hooper, Mrs. S.	100
Dalton, Charles H.	50	Hunnewell, H. H.	$100
Davis, James	200	Lodge, Mrs. Anna C.	50

(Continued.)

Subscriptions for the Observatory (continued) : —

Lowell, Augustus	50	Shattuck, G. O.	50
Norcross, Otis	100	Shaw, Mrs. Cora L.	30
Paine, Charles J.	50	Thayer, Nathaniel	100
Payson, Samuel R.	50	Upham, George P.	50
Pickering, E. C.	200	Weld, W. G.	50
Phillips, John C.	100	Wheelwright, A. C.	50
Robbins, R. E.	50	Wigglesworth, Misses	100
Sears, Mrs. David	100	Winthrop, Robert C.	50
Sears, F. R.	50		
			$3,330

Subscriptions to aid in publishing the University Bulletin, paid to Sept. 1, 1882, from

A. Agassiz	$50	C. S. Sargent	$50
Charles P. Curtis	200	W. B. Weeden	100
Henry Lee	50		
			$450

From an anonymous friend, $500, to increase the salary of the Professor of Entomology.

From the Dante Society, $50, for the purchase of books on Dante.

From R. H. McDonald, Esq., $20, for the purchase of books for the French department.

Final subscriptions for Chinese Instruction, paid to Sept. 1, 1882, from

Martin Brimmer	$333.34	E. R. Mudge	$333.33
D. O. Clark	166.67	George C. Richardson	333.34
George B. Dixwell	333.		
			$1,499.68

For lectures on Political Economy, through William Gray, Esq., Treas., $300.

Subscriptions towards the fund for the new building for the Medical School, paid to Sept. 1, 1882, from

Ames, Frederick L.	$10,000	Hamlen, Nathaniel P.	100
Blake, Arthur W.	1000	Head, Charles	100
Bradlee, Frederick H.	100	Hogg, Brown & Taylor	200
Burnett, Joseph	200	Lyman, Arthur T.	500
Burnham, John A.	1000	Lyman, Theodore	250
Chickering, George H.	100	Parker, H. D.	500
Cummings, John	500	Simmons, G. W.	50
Greenleaf, R. C.	1000		
			$15,600

The total amount of these gifts for immediate use is $157,099.68, as is also stated on page 14 of this report.

OTHER GIFTS.

From John Hargreaves, Esquire, of Liverpool, a picture by "Old Crome" framed in oak from a tree associated with the English ancestors of the Boston Mathers.

From the committee of arrangements for the Greek play, a grand piano.

From the executors of Charles Sumner a deed of an undivided half interest in one hundred and sixty acres of land in Wisconsin, having at present no market value.

During the year the College became entitled, under the will of the late George B. Dorr, of Boston, to property exceeding one hundred thousand dollars in value, bequeathed "for the benefit of the general funds of said College," without any restriction whatever; but as no part of this property came into the actual possession of the College until after the close of the financial year, the formal acknowledgment therefor will be made in the next Annual Report.

EDWARD W. HOOPER,
Treasurer.

Boston, Dec. 26, 1882.

ACCOUNTS.

1881-82.

General Statement of Receipts and Disbursements for the year ending

INCOME.

Interest on notes, mortgages, and advances,		$55,879.49
“ “ Massachusetts 5% Bonds,		2,753.54
“ “ Policy Mass. Hospital Life Insurance Co.,		200.00
“ “ New Boston Coal Mining Co. Bond,		700.00
“ “ Railroad Bonds (after deductions for sinking premiums).		
Atchison, Topeka, & St. Fe, 7%,	$12,612.27	
Buffalo, Bradford & Pittsburg,	4,200.00	
Burlington & Mo. River in Iowa, 7%,	3,229.29	
“ “ “ in Nebraska, 6%,	14,845.01	
Chicago, Burlington & Quincy, 4%,	17.64	
Marion & McPherson. 1st Mortg., 7%,	77.78	
Ionia & Lansing, 1st Mortg., 8%,	8,736.84	
Marq., Hough. & Onton., 6%,	478.67	
Kan. City, St. Joseph & Council Bluffs, 7%,	3,000.00	
Kansas City, Topeka, & Western, 7%,	4,900.78	
Michigan Southern & Northern Indiana,	70.00	
Nebraska, 7%,	4,988.88	
New York Central, 6%,	1,680.00	
Lincoln & No. Western, 7%,	3,250.23	
		62,087.39
“ “ Municipal Bonds.		
Cincinnati,	140.00	
Minneapolis,	160.00	
		300.00
Dividends on Stocks.		
Charles River National Bank,	480.00	
First (Cambridge) “ “	400.00	
Fitchburg “ “	192.00	
Massachusetts “ “	144.00	
Merchants “ “	1,584.00	
New England “ “	222.00	
Old Boston “ “	500.00	
Schenectady “ “ (N. Y.),	200.00	
Bank taxes refunded,	1,026.07	
		4,748.07
Amoskeag Manufacturing Co.,	1,920.00	
Amory “ “	216.00	
Massachusetts “ “	560.00	
Merrimack “ “	1,700.00	
Nashua “ “	1,440.00	
Pacific Mills “ “	1,000.00	
Stark Mills “ “	1,080.00	
Wamsutta “ “	640.00	
New Bedford Copper “	15.00	
		8,571.00
Chicago, Burlington & Quincy R. R.,	2,980.00	
Pittsfield & North Adams Railroad,	315.00	
Quincy Railroad Bridge Company,	100.00	
Pittsburg, Ft. Wayne, & Chicago R. R.,	350.00	
		3,745.00
Amount carried forward,		$138,984.49

by the Treasurer of Harvard College,
August 31, 1882.

EXPENSES.

Paid to account of Expenses in the

University, as per Table I. (page 32),		$30,644.41
College, " " II. (page 34).		
Salaries for instruction,	$137,059.27	
Repairs,	4,743.93	
Insurance on College Edifices, not valued on Treasurer's books,	10.76	
General Expenses,	39,269.63	
Scholarships,	25,473.31	
Beneficiaries,	3,236.83	
Prizes for Reading, &c.,	1,309.81	
Botanic Garden,	5,468.03	
Herbarium,	1,138.64	
Gymnasium,	6,272.02	
		223,982.23
Library, as per Table III. (page 39).		
Books,	10,650.71	
Salaries and other expenses,	20,137.21	
		30,787.92
Divinity School, as per Table IV. (page 40).		
Salaries and other expenses,	19,677.29	
Scholarships and Beneficiaries,	1,083.33	
		20,760.62
Law School, as per Table V. (page 42),		41,036.79
Medical School, as per Table VI. (page 43),		131,375.30
Dental School, as per Table VII. (page 44),		3,665.41
Lawrence Scientific School, as per Table VIII. (page 45).		
Salaries and other expenses,	20,735.89	
Museum of Comparative Zoölogy,	22,181.46	
		42,917.35
Observatory, as per Table IX. (page 46),		16,861.34
Bussey Institution, as per Table X. (page 46),	5,120.71	
Bussey Building Fund, as per Table X. (page 46),	6,509.10	
Arnold Arboretum, as per Table X. (page 46),	801.72	
		12,431.53
Amount carried forward		$554,462.90

General Statement of Receipts and Disbursements for the year ending

INCOME.

Amount brought forward, . .		$138,984.49
Real Estate, from rents, &c. (gross receipts).		
Cambridge (Houses and Lands), ...	36,465.56	
Boston (general investments), ...	72,878.11	
Bussey stores, ...	33,518.97	
Sundry estates, ...	7,720.17	150,582.81
Term Bills.		
College, as per Table II., ...	162,983.04	
Divinity School, as per Table IV., ...	2,949.12	
Law School, as per Table V., ...	22,550.00	
Medical School, as per Table VI., ...	51,415.54	
Dental School, as per Table VII., ...	4,000.00	
Lawrence Scientific School, as per Table VIII., .	4,985.00	
Bussey Institution, as per Table X., ...	410.00	249,292.70
Sundries.		
From Wm. Pennoyer Annuity, ...	277.50	
Trustees of Thayer Scholarships, ...	3,600.00	
" Count Rumford's Legacy, . . .	579.37	
" Edward Hopkins, ...	235.19	
Pew rents in Appleton Chapel, ...	174.00	
For use of Library by resident graduates and others,	200.00	
Degree of S.D., ...	60.00	
Final dividend from Manchester Print Works, . .	2.40	
Degree of Bachelor of Arts out of course, and Examination fees, ...	632.50	
Fees in Infirmary and Laboratory, Dental School, .	741.07	
Printing by College Press for other Departments, .	955.25	
Sales of grass and old material, ...	224.20	
Sales of old examination papers, ...	102.55	
Sale of time signals from Observatory, ...	2,850.00	
Sale of tickets to Commencement Dinner of 1882, .	509.00	
Sale of books, pamphlets, catalogues, &c., ...	205.56	
Divinity School balance of appropriation for books repaid, ...	124.37	
Use of lockers at Gymnasium, ...	1,304.00	
Returned by Beneficiaries, ...	832.35	
Fee for instruction in Chinese, ...	3.00	
Fees for use of Gymnasium, ...	20.00	
Repayment of advances for books from Subscription of 1880, ...	59.61	
Proportion of expenses of Bursar's office repaid by other Departments, ...	438.02	
Proportion of expenses of Gymnasium repaid by other Departments, ...	973.84	15,103.78
Sundry gifts for immediate use, see page 9, ...		157,099.68
Amount carried forward, . . .		$711,063.46

by the Treasurer of Harvard College,
August 31, 1882.

EXPENSES.

Amount brought forward,			$554,462.90
Real Estate, expenses.			
Insurance.			
Cambridge,	$15.00		
Boston,	1,015.00		
Bussey stores,	1,039.73		
		2,069.73	
Taxes.			
Cambridge,	1,993.73		
Boston,	11,452.21		
Bussey stores, &c.,	7,019.09		
		20,465.03	
Interest.			
Cambridge (on advances),	420.00		
Bussey stores (on advances),	2,028.31		
		2,448.31	
Repairs, improvements, care, cleaning and sundries.			
Cambridge,	10,063.02		
Boston,	7,095.71		
Bussey stores,	5,518.78		
		22,677.51	
Heating and hoisting for Bussey stores,	4,012.94		
Less for sales of heat and power,	2,270.00		
		1,742.94	
			49,403.52
Annuities.			
Bussey,		6,800.00	
Gore,		900.00	
Mary Osgood,		360.00	
Lucy Osgood,		780.00	
Class of 1802,		120.00	
Anonymous,		720.00	
Bemis,		2,752.50	
			12,432.50
Sundry payments from income.			
To the Treasurer of the Museum of Fine Arts, from Gray Fund for Engravings,		650.00	
For freight on engravings from income of Gray Fund for Engravings,		3.28	
The income of the Daniel Williams Fund for the benefit of the Herring Pond and Mashpee Indians,		948.94	
The income of the Sarah Winslow Fund, to the Minister and Teacher at Tyngsboro', Mass.,		252.88	
Expenses on account of Chinese Instruction,		4,082.81	
For lectures on Political Economy,		300.00	
			6,237.91
Amount carried forward,			**$622,536.83**

General Statement of Receipts and Disbursements for the year ending

RECEIPTS EXCLUSIVE OF INCOME.

Amount brought forward, ...		$711,063.46
GIFTS.		
Edward Russell Scholarship (additional), ...	125.00	
George and Martha Derby Scholarship, ...	5,000.00	
Lowell Fund for a Botanic Garden, ...	20,000.00	
" Book Fund, ...	20,000.00	
Charles Sumner Book Fund (additional), ...	17.20	
New Professorship of Law, ...	90,000.00	
Subscriptions to Law School Book Fund, ...	25,230.00	
" for endowment of Botanic Garden, . . .	2,000.00	
" " " " Physical Laboratory, .	22,000.00	
" " " " Divinity School, . . .	1,621.67	
" " " " Dental School, ...	510.00	
		186,503.87
SALES.		
$70,000 Massachusetts 5% Bonds, ...	81,275.00	
100,000 Nebraska R. R. 7% " (guaranteed) . .	118.500.00	
76,000 Burl. & Mo. Riv. (Iowa) R. R. L. G. 7% Bonds,	89,680.00	
8,000 " " " " (Neb.) " 6% called bds., paid off,	8,000.00	
41,000 Atch., Topeka, & St. Fe R. R. 7% Bonds, .	48,387.50	
5,000 Chicago, Burl. & Quincy R. R. 4% Bonds, .	4,175.00	
10 rights to Chicago, Burl. & Quincy R. R. stock,	157.75	
		350,175.25
SUNDRIES.		
From Dining Hall Association, to reduce debt, . . .	1,000.00	
Insurance for fire in Milk St. store, ...	101.50	
Dental School for Dr. Silva's subscription last year,	5.00	
		1,106.50
Advances to premiums on railroad bonds repaid, from $334,000 seven per cent bonds, ...		3,340.00
Advances to accrued interest on bonds repaid, ...		5,622.19
" " College Wharf repaid, ...		411.88
Balance, September 1, 1881.		
Cash in Suffolk National Bank, ...	19,063.38	
Cash in hands of Allen Danforth, Bursar, ...	1,131.61	
Term Bills due October, 1880, ...	71,163.80	
" " over due, ...	2,259.56	
		93,618.35
		$1,351,841.50

by the Treasurer of Harvard College, August 31, 1882.

EXPENSES.

Total of expenses brought forward, ... $622,536.83

INVESTMENTS AND SUNDRY PAYMENTS.

Burl. & Mo. River (Iowa) R. R. L. G. 7%,	$4,000	cost,	$4,660.00	
“ “ “ “ (Neb.) “ 6% Bonds,	20,000	“	20,761.25	
Atch., Top. & St. Fe R. R. 7% 1st mort. Bds.	20,000	“	23,800.00	
Ionia & Lansing “ 8% “ “ “	18,000	“	20,335.00	
Kan. City, Top. & W. “ 7% “ “ “	40,000	“	48,065.00	
Marion & McPherson “ 7% “ “ “	150,000	“	169,050.00	
Marq., Hough. & Ont. “ 6% “ “ “	23.000	“	23,942.50	
Linc. & No. Western “ 7% “ “ “	22,000	“	25,750.00	
Mass. 5% Bonds, 1894 (Paine Fund), .	1,500	“	1,755.00	
Chicago, Burl. & Quincy R. R. 4% Bonds }	5,000	“	4,175.00	
50 shares Chic., Burl. & Quincy R. R. Co. }		“	825.00	
500 “ “ “ “ “ “		“	64,894.46	
91 “ “ “ “ “ “ new		“	9,100.00	
				417,113.21
Paid for accrued interest on above bonds, ...				5,519.31
Invested in Notes and Mortgages, ...			1,400,000.00	
Less Notes and Mortgages paid off, ...			1,186,527.68	
				213,472.32
Paid Baring Brothers & Co. in account, ...			10,708.89	
Less drafts on Baring Brothers & Co., ...			10,347.22	
				361.67
Paid on account of improvements to Gray Estate, ...				450.00
“ “ “ “ “ “ Gore Hall, ...				483.05
“ “ “ “ “ “ Sever “				465.31
“ “ “ “ fire in Milk St. store, ...				101.50
“ “ “ “ advances to Geological Dept.				.25
“ “ “ “ Mr. Agassiz's note from income of Memorial Fd.,				4,652.06

Balance, August 31, 1882.		
Cash in Suffolk National Bank, ...	9,211.25	
Cash in hands of Allen Danforth, Bursar, ...	5,090.99	
Term Bills due October, 1882, ...	70,016.74	
“ “ overdue, ...	2,367.01	
		86,685.99
		$1,351,841.50

The following Account exhibits the State of the Property, as embraced in the Treasurer's Books, August 31, 1882.

Notes and Mortgages.				
Mortgages			$446,603.74	
Long Wharf Co.'s Notes			60,000.00	
Chic., Burl'n & Quincy R. R. Notes			100,000.00	
Manufacturing Co.'s Notes			260,000.00	
Personal Notes for Agassiz Memorial Fund			25,006.69	
Personal Note for new professorship in Law School			90,000.00	
				$981,610.43
Massachusetts 5% Bonds,	$22,500	valued at		25,805.00
New Boston Coal Mining Co. Bonds,	10,000	" "		9,000.00
Municipal Bonds.				
Cincinnati,	2,000.00	valued at	2,000.00	
Minneapolis,	2,000.00	" "	2,000.00	
				4,000.00
Railroad Bonds.				
Burl. & Mo. R. in Nebr. non ex. 6%,	259,000	val'd at	264,173.50	
Kan. City, St. Jos. & C. B. 1st M., 7%,	50,000	" "	50,000.00	
Lincoln & No. West., 1st M., 7%,	57,000	" "	57,000.00	
Atch., Top., & St. Fé, 1st M., 7%,	185,000	" "	185,000.00	
Kan. City, Top., & West., 1st M. 7%,	104,000	" "	104,000.00	
Marion & McPherson, 1st M., 7%,	150,000	" "	150,000.00	
Ionia & Lansing, 1st Mortg., 8%,	121,000	" "	117,617.50	
New York Central, 6%,	28,000	" "	27,000.00	
Marqu., Hough. & Onton., 6%,	23,000	" "	23,942.50	
Buffalo, Bradford, and Pittsb., 7%,	60,000	" "	60,000.00	
Michigan So. and No. Indiana, 7%,	1,000	" "	1,000.00	
Railroad Bond Premiums,			79,152.35	
				1,118,885.85
Railroad Stock.				
Chicago, Burlington, and Quincy,	1,001	shares,	99,261.93	
Pittsburgh, Fort Wayne and Chicago,	50	"	5,000.00	
Pittsfield and North Adams,	63	"	6,300.00	
Quincy R. R. Bridge Co.,	10	"	1,250.00	
				111,811.93
Manufacturing Stock.				
Amory,	36	shares,	3,600.00	
Amoskeag,	12	"	10,800.00	
Massachusetts Mills,	7	"	6,600.00	
Merrimack,	17	shares,	17,000.00	
Nashua,	36	"	25,560.00	
New Bedford Copper Co.,	5	"	250.00	
Pacific Mills,	20	"	17,468.29	
Stark Mills,	12	"	11,900.00	
Wamsutta Mills,	80	"	8,880.00	
				102,058.29
Amount carried forward,				$2,353,171.50

Amount brought forward, ...			$2,353,171.50
Bank Stock.			
Charles River, ...	60 shares,	6,000.00	
First Cambridge, ...	50 "	5,000.00	
Fitchburg, ...	24 "	2,403.00	
Massachusetts, ...	12 "	3,000.00	
Merchants, ...	264 "	34,732.00	
New England, ...	37 "	3,896.00	
Old Boston, ...	200 "	8,933.00	
Schenectady (N. Y.), ...	40 "	2,200.00	
			66,164.00
Real Estate.			
Houses and Lands in Cambridge yielding income,		357,163.83	
Unimproved Lands in Cambridge, ...		75,487.79	
Bussey Real Estate in Boston and Dedham, . .		413,092.80	
Amory Estate, Franklin Street, Boston, . . .		165,615.81	
Webb Estate, Washington Street, Boston, . .		164,604.79	
Andrews Estate, Washington Street, Boston, .		165,562.00	
Gray Estate, Washington Street, Boston, . . .		475,450.00	
Estate on Hawley Street, Boston, ...		38,650.78	
Estate on Hawkins Street, "		29,476.09	
Ward's (Bumkin) Island, Boston Harbor, . .		1,200.00	
Reversion of Buildings on Brattle Street, Boston,		1,000.00	
			1,887,303.89
Sundries.			
In hands of Count Rumford's Trustees in Paris,		10,000.00	
Annuity of William Pennoyer, valued at . . .		4,444.44	
Policy of the Mass. Hospital Life Insurance Co.,		5,000.00	
Due from Dining Hall Association, ...		36,232.16	
" " Lawrence Scientific School, ...		4,707.27	
" " Bussey Trust, ...		40,566.13	
" " Dental School, ...		14,488.37	
Advances to Scudder's Catalogue, ...		208.86	
" " Books, ...		29.36	
Balance of account for decorating Appleton Chapel,		2,859.62	
Term bills due October, 1882, ...		70,016.74	
" " overdue, ...		2,367.01	
			190,919.96
Cash in Suffolk National Bank, ...		9,211.25	
" " hands of Allen Danforth, Bursar, ...		5,090.99	14,302.24
			Total $4,511,861.59

The foregoing Property represents the following Funds and Balances, and is answerable for the same.

UNIVERSITY FUNDS.

Principal, Sept. 1, 1881.		Principal, Aug. 31, 1882.	
$99,700.89	Stock Account (so called), ...	$84,962.25	
141,638.74	Insurance and Guaranty Fund (so called),	141,638.74	
5,250.00	**Samuel D. Bradford** Fund, ...	5,250.00	
15,750.00	**Israel Munson** Fund, ...	15,750.00	
16,871.63	**Leonard Jarvis** Fund, ...	16,871.63	
1,250.44	**Peter C. Brooks** Fund for building a President's House, ...	1,242.38	
155.35	**Thomas Cotton** Fund, ...	155.73	
57,596.48	**John Parker** Fellowships, ...	57,233.40	
10,540.71	**Harris** Fellowships, ...	10,865.70	
11,947.88	**John Thornton Kirkland** Fellowship,	12,244.36	
9,999.83	**James Walker** Fellowship, ...	10,311.83	
27,810.78	**Rogers** Scholarship, ...	28,773.76	
1,598.53	**Sumner** Prize Fund, ...	1,688.39	
9,000.00	**Sever** Fund (unrestricted)	9,000.00	
21,785.76	Retiring Allowance Fund, ...	23,010.13	
150.00	**Robert N. Toppan** Prizes	300.00	
25,000.00	**John C. Gray** Fund, ...	25,000.00	
			444,298.30
	COLLEGE FUNDS.		
27,748.64	**Alford** Professorship, ...	27,748.64	
28,337.40	**Boylston** “	28,337.40	
21,619.50	**Eliot** “	21,619.50	
10,000.00	“ “ **(Jon. Phillips's gift)**,	10,000.00	
3,500.01	**Erving** “	3,500.01	
35,990.99	**Fisher** “	35,990.99	
20,217.08	**Hersey** “	20,217.08	
17,587.39	“ “ **(Thomas Lee's gift)**,	18,575.78	
3,747.33	**Hollis** “ (Mathematics), . .	3,747.33	
32,609.33	**Hollis** “ (Divinity), . . .	34,441.96	
43,062.93	**McLean** “	43,062.93	
21,000.00	**Perkins** “	21,000.00	
25,020.19	**Plummer** “	25,020.19	
52,500.00	**Pope** “	52,500.00	
52,996.37	**Rumford** “	52,996.37	
23,139.83	**Smith** “	23,139.83	
16,240.38	Fund for Permanent Tutors, ...	16,240.38	
125,000.00	**Class Subscription** Fund, ...	125,000.00	
12,698.04	**Daniel H. Peirce** “	12,766.91	
1,923.63	**Paul Dudley** Fund for Lectures, . .	2,031.76	
31,500.00	**Jonathan Phillips** Fund (unrestricted)	31,500.00	
$1,062,486.06	. . . . . . Amounts carried forward,	$609,437.06	444,298.30

Principal, Sept. 1, 1881.		Principal, Aug. 31, 1882.	
$1,062,486.06	Amounts brought forward,	$609,437.06	444,298.80
1,050.00	**John A. Blanchard** Fd. (unrestricted)	1,050.00	
3,234.59	**John W. P. Abbot** “ “	3,416.40	
5,600.00	**Daniel Austin** “ “	5,600.00	
345.30	**Henry Flynt's** Bequest,	346.16	
2,556.40	**Abbot** Scholarship,	2,550.05	
791.27	**Alford** “	795.72	
5,100.50	**Bartlett** “	5,137.18	
5,549.99	**Bassett** “	5,425.24	
11,840.64	**Bigelow** “	11,756.10	
94,399.69	**Bowditch** “	106,332.71	
	Bright “ (balance)	570.17	
2,739.17	**Browne** “	2,743.10	
7,116.47	**Class of 1802** Scholarship,	7,146.39	
3,123.80	“ **1814** “	3,099.37	
4,980.18	“ **1815** “ **(Kirkland)**,	5,010.06	
3,738.24	“ **1817** “	3,748.32	
2,635.98	“ **1835** “	2,634.12	
3,706.61	“ **1841** “	3,739.94	
2,838.33	“ **1852** “ **(Dana)**	2,997.83	
6,308.86	**Crowninshield** “	6,663.43	
	Derby “ (George & Martha)	5,199.06	
5,350.93	**W. S. Eliot** “	5,351.66	
2,445.83	**Greene** “	2,463.30	
6,054.14	**Hodges** “	6,394.37	
5,998.72	**Farrar** “	5,985.86	
5,202.44	**Levina Hoar** “	5,294.79	
4,840.61	**Hollis** “	4,862.67	
100.71	**Matthews** “ (balance),	530.88	
7,748.78	**Morey** “	7,684.27	
6,576.85	**Pennoyer** “	6,594.17	
513.04	**Edward Russell** “	673.90	
3,845.79	**Saltonstall** “ (Mary & Leverett),	3,861.94	
603.98	“ “ (Dorothy),	637.92	
5,322.24	**Slade** “	5,371.34	
3,172.67	**Sever** “	3,175.99	
9,392.02	**Sewall** “	9,419.85	
43,099.32	**Shattuck** “	43,721.48	
2,754.06	**Story** “	2,758.83	
4,163.24	**Gorham Thomas** “	4,147.20	
6,497.86	**Toppan** “	6,563.05	
25,183.05	**Townsend** “	25,045.52	
3,888.95	**Walcott** “	3,907.51	
8,191.89	**Whiting** “	8,652.28	
12,064.95	Exhibitions,	11,899.16	
1,764.40	Palfrey Exhibition,	1,773.54	
1,200.00	**Samuel Ward** Fund,	1,200.00	
1,006.26	**John Glover** Fund,	1,062.80	
2,147.04	**Rebecca A. Perkins** Fund,	2,267.70	
10,923.08	**Quincy Tufts** Fund,	10,961.35	
5,256.81	**Day** “	5,292.25	
10,226.59	**Munroe** “	10,216.31	
$1,435,628.33	Amounts carried forward,	$1,003,170.30	444.298.80

Principal, Sept. 1, 1881.		Principal, Aug. 31, 1882.	
$1,435,628.33	. . Amounts brought forward, .	$1,003,170.30	444,298.30
15,899.06	**Lee** Prizes for Reading, ...	15,692.58	
4,348.53	**Boylston** Prizes for Elocution, . .	4,337.94	
11,693.03	**Bowdoin** Prizes for Dissertations, .	11,925.18	
1.030.91	**Hopkins** Gift for "Deturs," . . .	994.23	
52,127.57	Botanic Garden Fund, ...	54,255.77	
15,882.31	**Lowell** Fund for a Botanic Garden, .	35,882.31	
18,192.57	Herbarium Fund, ...	18,100.42	
125.00	Salary account (unexpended balance),	125.00	
7,413.46	Physical Laboratory, ...	29,956.58	
			1,174,440.31
	LIBRARY FUNDS.		
10,965.37	Subscription for Library, ...	11,287.47	
2,100.50	**Bowditch** Fund, ...	2,140.40	
1,516.34	**Bright** "	2,620.11	
5,574.63	**Denny** "	5,701.33	
5,296.52	**Farrar** "	5,303.00	
3,343.83	**Haven** "	3,515.70	
5,563.56	**Hayward** "	5,755.36	
2,414.81	**Hollis** "	2,458.71	
2,105.21	**Homer** "	2,079.52	
5,681.55	**Lane** "	5,797.68	
	Lowell "	20,469.98	
61,044.49	**Minot** "	61,232.01	
5,307.31	**Salisbury** "	5,188.81	
20,239.27	**Sever** "	20,538.32	
4,247.32	**Shapleigh** "	4,455.24	
38,264.15	**Sumner** "	38,310.43	
5,031.18	**Tucker** "	5,018.29	
5,708.75	**Ward** "	6,014.71	
124.67	**Wales** "	178.59	
16,292.28	**Walker** "	16,489.87	
94.16	Sundry gifts, etc. (unexpended balances),	158.06	
			224,713.59
	LAW SCHOOL FUNDS.		
8,062.09	Law School (balance), ...	8,426.35	
15,750.00	**Dane** Professorship, ...	15,750,00	
23,979.82	**Bussey** "	23,979.82	
8,340.81	**Royall** "	8,340.81	
	New "	90,000.00	
	Law School Book Fund, ...	25,230.00	
	" " Building Fhnd, . . .	125,139.80	
			296,866.78
	MEDICAL SCHOOL FUNDS.		
59,469.01	Medical School (balance), ...	67,312.93	
19,192.65	**Jackson** Medical Fund, ...	19,192.65	
17,129.20	**Geo. C. Shattuck** Fund, ...	17,129.20	
11,497.76	**Warren** Fund for Anatom'l Museum,	12,031.53	
3,916.51	**Boylston** Fund for Medical Prizes,	3,787.65	
2,159.08	" " " " Books,	2,280.42	
2,489.91	Medical Library Fund, ...	2,624.85	
161,771.40	Medical School Building Fund, . .	101,420.32	
2,000.00	**Quincy Tufts** Medical Fund, . .	2,000.00	
765.06	**Edward M. Barringer** Fund, . .	808.05	
			228,587.60
$2,099,779.97	. . . . . Amounts carried forward, ...		$2,368,906.58

Principal, Sept. 1, 1881.			Principal, Aug. 31, 1882.
$2,099,779.97	. . . . . Amounts brought forward, ...		$2,368,906.58
	DIVINITY SCHOOL FUNDS.		
20,666.76	General Fund, ...	23,486.17	
87,583.74	**Bussey** Professorship, ...	87,583.74	
16,015.81	**Parkman** "	16,015.81	
6,008.43	**Hancock** "	6,008.43	
43,845.73	**Winn** Prof. of Ecclesiastical History,	44,345.73	
20,280.38	**Dexter** Lectureship, ...	20,280.38	
9,184.69	**Henry Lienow** Fund, ...	9,184.69	
5,250.00	**Mary P. Townsend** Fund, . . .	5,250.00	
2,100.00	**Winthrop Ward** Fund, ...	2,100.00	
1,050.00	**Samuel Hoar** "	1,050.00	
1,050.00	**Abraham W. Fuller** Fund, . . .	1,050.00	
1,050.00	**Caroline Merriam** " . . .	1,050.00	
12,925.74	**Jackson** Foundation, ...	13,012.18	
2,177.95	**Joshua Clapp** Fund, ...	2,177.95	
1,050.00	**William Pomeroy** Fund, . . .	1,050.00	
525.00	**Hannah C. Andrews** Fund, . .	525.00	
3,149.62	**J. Henry Kendall** Scholarship, . .	3,326.65	
2,832.54	**Nancy Kendall** " . . .	2,898.42	
911.34	**Lewis Gould** Fund	911.34	
747.50	**Adams Ayer** "	789.54	
7,875.00	**Joseph Baker** "	7,875.00	
5,304.07	**Thomas Cary** Scholarships, . . .	5,252.15	
2,196.50	**George Chapman** Scholarship, .	2,319.97	
2,993.09	**Joshua Clapp** " . .	3,161.30	
1,586.61	Beneficiary money returned . . .	1,675.80	
40,000.00	**Th. Tileston** of New York Endowm't	40,000.00	
10,000.00	**Henry P. Kidder** Fund, ...	10,000.00	
1,000.00	**Abby Crocker Richmond** Fund, .	1,000.00	
66,913.69	New Endowment, ...	68,535.36	
17,000.00	**Oliver Ames** Fund, ...	17,000.00	
800.00	**Daniel Austin** Fund, ...	800.00	
10,610.44	**Abner W. Buttrick** Fund, . . .	11,206.72	
			360,922.33
	LAWRENCE SCIENTIFIC SCHOOL FUNDS.		
38,807.17	Professorship of Engineering, . .	38,807.17	
2,860.50	Professorship of Chemistry, . . .	2,860.50	
61,536,43	**Abbott Lawrence** Fund,. . . .	61,536.43	
50,375.00	**James Lawrence** "	50,375.00	
30,686.85	**John B. Barringer** "	30,686.85	
100,516.65	**Sturgis Hooper** "	100,620.00	
50,000.00	**Gray** Fund for Zoölogical Museum,	50,000.00	
297,933.10	**Agassiz Memorial** Fund, . .	297,933.10	
7,594.01	Teachers' and Pupils' Fund, . .	7,594.01	
117,469.34	Permanent Fund, ...	117,469.34	
7,740.66	**Humboldt** Fund, ...	7,740.66	
			765,623.06
$3,219,984.31	. . . . . . Amounts carried forward, ...		$3,495,451.97

Principal, Sept. 1, 1881.		Principal, Aug. 31, 1882.	
$3,219,984.31	. . . . . Amounts brought forward, ...		$3,495,451.97
	OBSERVATORY FUNDS.		
110,293.88	**Edward B. Phillips** Fund, . . .	110,293.88	
21,000.00	**James Hayward** " . . .	21,000.00	
21,826.88	**David Sears** " . . .	22,440.22	
12,161.96	**Josiah Quincy** " . . .	12,845.46	
2,000.00	**Charlotte Harris** " . . .	2,000.00	
10,000.00	Anonymous Observatory Fund (at present charged with an Annuity),	10,000.00	
6,654.65	Observatory Subscriptions (balance),	5,481.98	
			184,061.54
	OTHER FUNDS FOR SPECIAL PURPOSES.		
413,092.80	**Bussey** Trust (income thereof, ½ to Bussey Institution, ¼ to Law School, and ¼ to Divinity School), . . .	413,092.80	
50,540.17	**Bright** Legacy, ...	50,000.00	
24,858.54	**Robert Troup Paine** Fund, . . .	25,930.13	
	Bussey Institution, ...	805.55	
	Dental Subscription Fund, . . .	515.00	
3,684.15	**Bussey** Building Fund, ...	2,882.43	
151,248.31	**James Arnold** "	151,673.32	
7,937.76	**Arnold** Arboretum	9,949.91	
42,000.00	**James Savage** "	42,000.00	
15,692.86	**Gray** Fund for Engravings, . . .	15,941.53	
20,776.07	**Gore** Annuity Fund, ...	20,560.63	
7,311.66	**Mary Osgood** Annuity Fund, . .	7,362.59	
12,909.99	**Lucy Osgood** Annuity Fund, . .	12,855.53	
51.015.81	**Bemis** Annuity Fund, ...	51,073.31	
2,394.43	**Gospel Church** Fund, ...	2,528.97	
3,171.50	**John Foster** Fund (income to Divinity School, Law School, and Medical School, in turn), ...	3,171.50	
465.31	**Sever** Hall Building Fund, . . .		
1,479.43	Baring Bros. & Co. (balance due them),	1,117.76	
			811,460.96
	FUNDS IN TRUST FOR PURPOSES NOT CONNECTED WITH THE COLLEGE.		
16,095.39	**Daniel Williams** Fund for the conversion of the Indians, ...	16,050.99	
4,824.39	**Sarah Winslow** Fund, for the Minister and Teacher at Tyngsborough, Mass.,	4,836.13	
			20,887.12
$4,233,420.25			$4,511,861.59

Changes in the Funds during the year ending August 31, 1882.

Total amount of Funds, August 31, 1882, as before stated,	$4,511,861.59	
Total amount of Funds, September 1, 1881, as before stated,	4,233,420.25	
Showing a total increase during the year of		$278,441.34
Which is made up as follows: —		
Gifts forming new Funds or increasing old ones,	186,503.87	
Increase of Funds established during the year, and balances created during the year,	127,189.56	
Increase of specially invested Fund by gain from change of investment,	11,275.00	
		324,968.43
Deduct from this amount for		
Stock Account, this year's deficit charged off, being excess of expenditure over income of College, Library, and University accounts,	14,738.64	
Decrease more than increase of Funds and balances, which appear both at the beginning and end of the the year,	30,840.09	
Gore Annuity Fund, part of principal spent,	483.05	
Sever Hall Fund, balance " "	465.31	
		46,527.09
		$278,441.34

Net increase of Funds, established during the year, as above,	127,189.56	
Increase of specially invested Fund,	11,275.00	
		138,464.56
Less deduction as above,		46,527.09
Leaving amount of the net increase of the Funds and balances, excluding gifts for capital account, as is also shown in the following table,		$91,937.47

Statement showing Changes in the Different

Increase of Funds which appear both at the beginning and the end of the year, being the excess of income (including gifts for immediate use) over payments towards the special objects of those Funds.

Thomas Cotton Fund,	.38
Harris Fellowship,	324.99
John Thornton Kirkland Fellowship,	296.48
James Walker Fellowship,	312.00
Rogers Scholarship,	962.98
Sumner Prize Fund,	89.86
Retiring Allowance Fund,	1,224.37
Robert N. Toppan Prizes,	150.00
Hersey Professorship (**Thomas Lee's** gift),	988.39
Hollis “ (Divinity),	1,832.63
Daniel H. Peirce Fund,	68.87
Paul Dudley Fund for Lectures,	108.13
John W. P. Abbott Fund (unrestricted),	181.81
Henry Flynt's Bequest,	.86
Alford Scholarship,	4.45
Bartlett “	36.68
Bowditch “	658.02
Browne “	3.93
Class of 1802 Scholarship,	29.92
“ **1815** “	29.88
“ **1817** “	10.08
“ **1841** “	33.33
“ **1852** “	159.50
Crowninshield “	354.57
W. S. Eliot “	.73
Greene “	17.47
Hodges “	340.23
Levina Hoar “	92.35
Hollis “	22.06
Matthews “	430.17
Pennoyer “	17.32
Edward Russell “	35.86
Saltonstall “ **(Dorothy)**,	33.94
“ “ **(Mary & Leverett)**,	16.15
Slade “	49.10
Sever “	3.32
Sewall “	27.83
Shattuck “	622.16
Story “	4.77
Toppan “	65.19
Walcott “	18.56
Whiting “	460.39
Palfrey Exhibition,	9.14
Amount carried forward,	$10.128.85

Funds during the year ending August 31, 1882.

Decrease of Funds, which appear both at the beginning and the end of the year, being the excess of payments over income received (including gifts for immediate use) for the special objects of those Funds.

Peter C. Brooks Fund,	$8.06	
John Parker Fellowships,	363.08	
Abbot Scholarship,	6.35	
Bassett "	124.75	
Bigelow "	84.54	
Class of 1814 Scholarship,	24.43	
" **1835** "	1.86	
Farrar "	12.86	
Morey "	64.51	
Gorham Thomas "	16.04	
Townsend "	87.53	
Exhibitions,	165.79	
Munroe Fund,	10.28	
Lee Prizes for Reading,	206.48	
Boylston Prizes for Elocution,	10.59	
Hopkins Gift for "Deturs,"	36.68	
Herbarium Fund,	92.15	
Homer Book "	25.69	
Salisbury " "	118.50	
Tucker " "	12.89	
Boylston Fund for Medical Prizes,	128.86	
Medical School Building Fund,	60,351.08	
Thomas Cary Scholarships,	51.92	
Observatory Subscriptions (balance),	1,172.67	
Bright Legacy,	540.17	
Bussey Building Fund,	801.72	
Lucy Osgood Annuity Fund,	54.46	
Baring Bros. & Co.,	361.67	
Daniel Williams Fund,	44.40	
		64,980.01
Decrease of Stock Acc't, by amount of this year's deficit charged off,		14,738.64
Gore Annuity Fund, spent in improving Gore Hall, out of principal,		483.05
Sever Hall Fund, balance of account spent on building,		465.31
Amount carried forward,		$80,667.01

Statement showing Changes in the Different

Amount brought forward, .	$10,128.85
John Glover Fund,	56.54
Rebecca A. Perkins Fund,	120.66
Quincy Tufts Fund,	38.27
Day Fund,	35.44
Bowdoin Prizes for Dissertations,	232.15
Botanic Garden Fund,	128.20
Physical Laboratory Fund,	543.12
Subscription for Library,	322.10
Bowditch Book Fund,	39.90
Bright " "	1,103.77
Denny " "	126.70
Farrar " "	6.48
Haven " "	171.87
Hayward " "	191.80
Hollis " "	43.90
Lane " "	116.13
Minot " "	187.52
Sever " "	299.05
Shapleigh " "	207.92
Sumner " "	29.08
Ward " "	305.96
Wales " "	53.92
Walker " "	197.59
Sundry gifts for Books (unexpended balances),	63.90
Law School (balance),	364.26
Medical School (balance),	7,843.92
Warren Fund for Anatomical Museum,	533.77
Boylston Fund for Medical Books,	121.34
Medical Library Fund,	134.94
Edward M. Barringer Fund,	42.99
Divinity School (general fund),	2,819.41
Winn Professorship of Ecclesiastical History,	500.00
Jackson Foundation,	86.44
J. H. Kendall Scholarship,	177.03
Nancy " "	65.88
Adams Ayer Fund,	42.04
George Chapman "	123.47
Joshua Clapp "	168.21
Divinity School Beneficiary money returned,	89.19
Abner W. Buttrick Fund,	596.28
Sturgis Hooper "	103.35
David Sears "	613.34
Josiah Quincy "	683.50
Robert Troup Paine "	1,071.59
James Arnold "	425.01
Arnold Arboretum "	2,012.15
Amount carried forward,	$33,368.93

Funds during the year ending August 31, 1882. (Continued.)

Amount brought forward, ...	**$80,667.01**
Amount carried forward, ...	$80,667.01

Statement showing Changes in the Different

Amount brought forward,	$33,368.93	
Gray Fund for Engravings, ...	248.67	
Gore Annuity Fund, ...	267.61	
Mary Osgood " "	50.93	
Bemis " "	57.50	
Gospel Church "	134.54	
Sarah Winslow "	11.74	
		34,139.92
Increase of Funds established during the year.		
Lowell Book Fund, ...	469.98	
George and Martha Derby Scholarship, . . .	199.06	
		669.04
Credit balances created,		
Law School Building Fund, ...	125,139.80	
Bussey Institution, ...	805.55	
Bright Scholarships, ...	570.17	
Gift for endowment of Dental School, treated last year as income, now transferred to principal,	5.00	
		126,520.52
Bowditch Scholarships, gain from change of special investment,		11,275.00

Total, ...	$172,604.48

Funds during the year ending August 31, 1882. (Continued.)

Amount brought forward, ...	$80,667.01
Balance, which is the net increase of the Funds for the year ending August 31, 1882, apart from gifts for capital account,	91,937.47
Total, ...	$172,604.48

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every fund, in case that sum be either less or more than the actual income of the fund. If the object to which the income of a fund is to be applied be a general one, — like salaries, for example,— no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 50.

TABLE No. I.

THE UNIVERSITY.

RECEIPTS.

Income of the unappropriated fund heretofore called the Stock Account,	$5,603.20	
Income of the following funds : —		
Insurance and Guaranty,	7,960.11	
Israel Munson,	885.15	
Leonard Jarvis,	948.21	
Samuel D. Bradford,	295.05	
Peter C. Brooks,	70.25	
Thomas Cotton,	8.26	
Parker Fellowship,	3,236.92	
John Thornton Kirkland Fellowship,	671.48	
Harris Fellowship,	592.40	
James Walker Fellowship,	562.00	
Rogers Scholarship,	1,562.98	
Sumner Prize,	89.86	
Sever,	505.80	
Retiring Allowance,	1,224.37	
John C. Gray,	1,405.00	
		25,621.04
For the degree of S.D.		60.00
For care of the **Sarah Winslow** Fund,		6.49
Balance remaining after dividing the net income among the Funds,		208.97
Sale of Quinquennial Catalogues,		8.00
From other Departments for proportion of expenses of Bursar's office,		438.02
From **Robert N. Toppan,** additional gift for prize on Political Science,		150.00
		$26,492.52

PAYMENTS.

Overseers' Expenses.		
Advertising,	$220.90	
Printing President's Annual Report,	458.25	
Printing Treasurer's " "	118.69	
Printing other reports, auditing Treasurer's accounts, &c.,	184.78	
Amount carried forward,		$982.62

Table I., continued.

PAYMENTS.

Amount brought forward,		$982.62
Office Expenses.		
President's	124.69	
Treasurer's	337.32	
Bursar's	616.37	
Supt. of Buildings,	24.60	
Corporation Rooms (fuel, rent, &c.),	1,701.56	2,804.54
Salaries.		
President,	$5,007.88	
Treasurer,	4,000.00	
Secretary of the Board of Overseers,	100.00	
Bursar,	3,000.00	
Bursar's Assistant,	834.44	
Secretary at Cambridge,	600.00	
For keeping Treasurer's books and copying records and other papers,	2,800.00	
Superintendent of Buildings,	1,531.14	17,873.46
Fellowships.		
John Parker,	3,600.00	
Harris,	267.41	
John Thornton Kirkland,	375.00	
Rogers Scholarship,	600.00	
James Walker,	250.00	5,092.41
Memorial Hall and Sanders Theatre.		
Repairs, fuel, gas, &c.,		1,554.42
Sundries.		
Advertising,	37.05	
Labor, &c. on grounds outside of College Yard,	269.60	
Repairs and improvements on the President's house,	78.31	
Furniture,	701.30	
Subscription to Mercantile Agency,	125.00	
Watering streets,	205.00	
Watchmen,	500.63	
Examinations at New York, Cincinnati, and Exeter,	124.60	
Rent of Hall in Boston for lectures on Pedagogy,	36.00	
Editing list of University publications,	66.90	
Fire Apparatus,	48.00	
Freight, legal services, diplomas, &c.,	144.57	2,336.96
		$30,644.41

Table No. II.

THE COLLEGE.

RECEIPTS.

From Term Bills.			
Instruction,		$128,656.66	
Rents available for general expenses,		33,873.88	
Diplomas,		452.50	162,983.04
Income of Scholarship Funds.			
Abbot,		$143.65	
Alford,		44.45	
Bartlett,		286.68	
Bassett. Interest,	$58.56		
From special investment,	275.00	333.56	
Bigelow,		665.46	
Bowditch. Interest,	$4,226.07		
From special investment,	1,681.95	5,908.02	
Bright, ½ income of Bright Legacy,		1,405.00	
Browne,		153.93	
Class of 1802,		399.92	
" **1814**,		175.57	
" **1815 (Kirkland)**,		279.88	
" **1817**,		210.08	
" **1835**,		148.14	
" **1841**,		208.33	
" **1852 (Dana)** (accumulating),		159.50	
Crowninshield (accumulating),		354.57	
Derby, George and **Martha**,		199.06	
Wm. Samuel Eliot,		300.73	
Farrar,		337.14	
Greene,		137.47	
Levina Hoar (Town of Lincoln),		292.35	
Hodges (accumulating),		340.23	
Hollis,		272.06	
Matthews (½ of net rents of Hall),		4,930.17	
Morey,		435.49	
Pennoyer. Interest,	$119.82		
Annuity,	277.50	397.32	
Edward Russell (accumulating),		35.86	
Saltonstall, Mary and **Leverett**,		216.15	
Saltonstall, Dorothy (accumulating),		33.94	
Savage,		300.00	
Sever,		178.32	
Sewall,		527.83	
Shattuck,		2,422.16	
Slade,		299.10	
Story,		154.77	
Gorham Thomas,		233.96	
Toppan,		365.19	
Townsend,		1,412.47	
Walcott,		218.56	
Whiting (accumulating),		460.39	25,377.46
Received from the Trustees of the **Thayer** Scholarships,			3,600.00
Amount carried forward,			$191,960.50

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward, ...			$191,960.50
Other Beneficiary Funds, income of.			
"Exhibitions," Interest, ...	$678.05		
Returned by beneficiaries,	832.35	$1,510.40	
Palfrey "Exhibition,"		99.14	
Samuel Ward, ...		50.00	
John Glover (accumulating), ...		56.54	
Rebecca A. Perkins "		120.66	
Quincy Tufts, ...		613.87	
Moses Day, ...		295.44	
Munroe, ...		574.76	
			3,320.81
Prize Funds, income of.			
Thomas Lee Prizes for Reading, ...		893.52	
Ward Nicholas Boylston Prizes for Elocution,		244.41	
James Bowdoin Prizes for Dissertations, . . .		657.15	
Edward Hopkins Gift for "Deturs,"		293.13	
			2,088.21
Funds for Instruction.			
Income of the **Alford** Professorship, ...		1,559.49	
Boylston "		1,592.54	
Eliot "		1,215.04	
J. Phillips's addition to Eliot Prof.,		500.00	
Erving Professorship, ...		196.70	
Fisher "		2,022.69	
Hersey "		702.75	
Hollis " (Mathematics), . .		210.58	
McLean "		2,420.14	
Perkins "		1,180.20	
Plummer "		1,406.12	
Pope "		2,950.50	
Rumford "		2,995.75	
Smith "		1,300.47	
Fund for Permanent Tutors, . . .		912.69	
Thos. Lee Fund for the Hersey Prof.		988.39	
Class Subscription, ...		7,025.00	
Henry Flynt, ...		18.44	
Hollis Prof. of Divinity (accumulat'g),		1,832.63	
Paul Dudley Fund for Lectures, "		108.13	
Anonymous gift, to increase salary, ...		500.00	
			31,638.25
Botanic Garden.			
Income of Fund. Interest, ...	$2,027.98		
From special investment,	1,020.00	3,047.98	
" " the **Lowell Fund**, ...		1,548.25	
Estimated value of use of house by Prof. Gray,		1,000.00	5,596.23
Herbarium. Income of Fund, ...		1,022.45	
Sale of paper, &c., ...		240.4	1,046.49
Amount carried forward, ...			$235,650.49

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward, ...		$235,650.49
Income of **Jonathan Phillips's** unrestricted Fund,	$1,770.30	
" " **John A. Blanchard's** " "	59.01	
" " **Daniel H. Pierce** Fund, ...	688.72	
" " **J. W. P. Abbot's** " (accumulating),	181.81	
" " Fund for Physical Laboratory, ...	543.12	3,242.96
Sundries.		
Pew Rents, **Appleton** Chapel, ...	174.00	
For the Degree of Bachelor of Arts out of course, and examination fees, ...	632.50	
Sales of grass and old material, ...	126.00	
Sale of old examination papers, ...	102.55	
For Printing by College Press for other departm'ts,	955.25	
For use of rooms by College officers, ...	945.00	
Sale of tickets to Commencement Dinner of 1882,	509.00	
For use of lockers at Gymnasium, ...	1,304.00	
Fees for use of Gymnasium, ...	20.00	
For use of Gymnasium by other Departments, .	973.84	
From R. H. McDonald, for books for French Dpt.	20.00	5,762.14
Total receipts, ...		$244,655.59

PAYMENTS.

Paid the incumbents of the following Scholarships.

Abbot, ...	$150.00
Alford, ...	40.00
Bartlett, ...	250.00
Basset, ...	458.31
Bigelow, ...	750.00
Bowditch, ...	5,250.00
Bright, ...	1,375.00
Browne, ...	150.00
Class of 1802, ...	250.00
" **1814**, ...	200.00
" **1815 (Kirkland)**, ...	250.00
" **1817**, ...	200.00
" **1835**, ...	150.00
" **1841**, ...	175.00
Wm. Samuel Eliot, ...	300.00
Farrar, ...	350.00
Greene, ...	120.00
Levina Hoar, ...	200.00
Hollis,.	250.00
Matthews, ...	4,500.00
Morey, ...	500.00
Amount carried forward,	$15,868.31

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward,		$15,868.31	
Pennoyer,		380.00	
Saltonstall, Mary and Leverett,		200.00	
Savage,		300.00	
Sever,		175.00	
Sewall,		500.00	
Shattuck,		1,800.00	
Slade,		250.00	
Story,		150.00	
Thayer,		3,600.00	
Gorham Thomas,		250.00	
Toppan,		300.00	
Townsend,		1,500.00	
Walcott,		200.00	
			25,473.31
Paid other Beneficiaries.			
Exhibitions,		1,676.19	
Palfrey Exhibition,		90.00	
Samuel Ward Income,		50.00	
Quincy Tufts " (part of),		575.60	
Day Fund " " "		260.00	
Munroe Fund " " "		585.04	
			3,236.83
Prizes. **Lee** Prizes for Reading,		300.00	
Boylston Prizes for Elocution,		255.00	
Bowdoin Prizes for Dissertations		425.00	
"Deturs" from **Hopkins** Fund		329.81	
			1,309.81
Salaries for instruction,			137,059.27
Repairs and improvements on College Edifices not valued on Treasurer's books,			4,743.93
Insurance on College Edifices, etc. not valued on Treasurer's books,			10.76
Botanic Garden, for labor, repairs, and materials,			5,468.03
Herbarium, " " "			1,138.64
Gymnasium, Locker money, paid Director,		1,088.00	
Salaries and wages,		2,595.00	
Janitors and cleaning,		807.84	
Gas, water, and sundries,		935.91	
Fuel,		629.62	
Apparatus and fittings,		215.65	
			6,272.02
General Expenses.			
Appropriations for collections and laboratories.			
Physical Apparatus (Prof. Lovering),	$600.00		
Mineral and Chemical (Prof. Cooke),	800.00		
Rumford (Prof. Gibbs),	650.20		
Botanical (Prof. Farlow),	599.42		
Amounts carried forward,	$2,649.62		$184,712.60

TABLE II., CONTINUED.

PAYMENTS.

Amounts brought forward,	$2,649.62		$184,712.60
Physiological (Asst. Prof. James), . . .	74.14		
Geological (Prof. Shaler), ...	135.63		
Zoölogical (Instructors Faxon and Mark),	161.71		
Fine Arts (Prof. Norton), ...	515.33		
Physical (Prof. Trowbridge), ...	593.44		
Drawing (Instructor Moore), ...	146.57		
Greek Department (Prof. Goodwin), . . .	75.70		
Rhetoric and English (Prof. Hill)	7.96		
		$4,360.10	
Appleton Chapel. Singing, blowing organ, etc., .		1,624.12	
Admission examinations, ...		1,004.65	
Advertising, ...		15.75	
Books and binding, ...		113.80	
Clerk in Chemical Laboratory, ...		286.90	
Cleaning and care of College buildings not valued on Treasurer's books, ...		8,492.22	
College Yard expenses, labor and material, &c., .		2,887.06	
Commencement Dinner 1882, ...		913.26	
Dean's and Registrar's Office, clerk, stationery, postage, copying, etc., ...		1,681.50	
Fuel, ...		3,615.69	
Furniture, ...		51.77	
Freight, diplomas, and sundries, ...		560.36	
Gas, ...		1,771.01	
Mats, ...		86.80	
Music, Class-Day, ...		125.00	
" Commencement, 1881, 1882, ...		335.00	
Pews hired in Cambridge churches, ...		927.00	
Preaching and morning services, ...		2,295.00	
Printing office, expenses, ...		3,249.81	
Printing, ...		122.73	
Services of examiners and proctors, ...		2,639.13	
" " undergraduates, ...		707.91	
Watchman, ...		973.00	
Water rates, ...		430.06	
			39,269.63
Total payments, ...			$223,982.23

TABLE No. III.

THE LIBRARY.

RECEIPTS.

Income of the following Funds for the purchase of books.

Subscription for Library, ...		$616.23
Nathaniel I. Bowditch, ...		118.08
Bright, ½ income of the **Bright** Legacy,	$1,405.00	
Interest on balance, ...	85.20	1,490.20
Amount carried forward,		$2,224.51

Amount brought forward,		$2,224.51	
Denny,		313.32	
Eliza Farrar,		297.69	
Horace A. Haven,		187.93	
George Hayward,		312.70	
Thomas Hollis,		135.72	
Sidney Homer,		118.30	
Frederick A. Lane,		319.33	
Lowell,		655.69	
Charles Minot. Interest,	$58.67		
From special investment,	4,200.00	4,258.67	
Stephen Salisbury,		298.25	
Sever,		1,137.43	
Samuel Shapleigh,		238.68	
Charles Sumner,		2,150.77	
Ichabod Tucker. From special investment,		200.00	
Thomas W. Ward,		320.85	
George W. Wales. Gift,	$200.00		
Interest on unexpended balance,	7.03	207.03	
James Walker,		915.61	
Gift from Dante Society,		50.00	
Subscription of 1880,		59.61	
			14,402.09
James Savage Fund for general expenses (½ of income),		1,030.20	
Daniel Austin " " " "		314.72	
			1,344.92
William B. Weeden, gift to aid in publ. Lib'y Bulletins,		100.00	
Henry Lee, " " " " " " "		50.00	
Alexander Agassiz, " " " " " " "		50.00	
Charles P. Curtis, " " " " " " "		200.00	
Charles S. Sargent, " " " " " " "		50.00	
			450.00
Fees for use of Library,		200.00	
Sales of Bulletins and Calendars,		153.00	
			353.00
			$16,550.01

PAYMENTS.

For Books from

Subscription Fund,		$294.13
Bowditch	"	78.18
Bright	"	386.43
Denny	"	186.62
Farrar	"	291.21
Gray	"	.70
Haven	"	16.06
Hayward	"	120.90
Hollis	"	91.82
Homer	"	143.99
Lane	"	203.20
Lowell	"	185.71
Amount carried forward,		$1,998.95

TABLE III., CONTINUED.

PAYMENTS.

Amount brought forward,	$1,998.95	
Minot Fund,	4,071.15	
Salisbury "	416.75	
Sever "	838.38	
Shapleigh "	30.76	
Sumner "	2,121.69	
Tucker "	212.89	
Ward "	14.89	
Wales "	153.11	
Walker "	718.02	
Dante Society money,	8.64	
Duplicate "	2.93	
Subscription of 1880,	62.55	
		10,650.71
Salaries and wages,	15,477.70	
Binding,	1,139.18	
Stationery and postage,	428.40	
Fuel,	837.95	
Repairs and improvements,	374.30	
Freight, water, and sundries,	169.54	
Janitors and cleaning,	431.27	
Furniture,	29.60	
Insurance on steam boiler,	15.00	
Bulletins, and other printing,	1,197.12	
Mats,	37.15	
		20,137.21
		$30,787.92

TABLE NO. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of the following Funds applicable to Salaries.

General Fund,	$1,161.49
Benjamin Bussey Professorship,	2,112.22
Parkman Professorship,	900.10
John Hancock "	337.65
Winn Professorship of Ecclesiastical History,	2,464.15
Samuel Dexter,	1,139.74
Henry Lienow,	516.20
Mary P. Townsend,	295.05
Winthrop Ward,	118.02
Samuel Hoar,	59.01
Abraham W. Fuller,	59.01
Caroline Merriam,	59.01
Joseph Baker,	442.58
Amount carried forward,	$9,664.23

TABLE IV., CONTINUED.

RECEIPTS.

Amount brought forward, . . .	$9,664.23	
Thomas Tileston of New York Endowment, .	2,248.00	
Oliver Ames, ...	955.40	
Henry P. Kidder, ...	562.00	
Abby Crocker Richmond, ...	56.20	
New Subscription, ...	3,787.77	17,273.60
Income of Scholarship Funds.		
Thomas Cary, ...	298.08	
George Chapman, ...	123.47	
Joshua Clapp, ...	168.21	
Jackson Foundation, ...	726.44	
J. Henry Kendall, ...	177.03	
Nancy Kendall, ...	159.21	1,652.44
Income of other Funds.		
Joshua Clapp, ...	122.40	
William Pomeroy, ...	59.01	
Hannah C. Andrews, ...	29.51	
Lewis Gould, ...	51.20	
Daniel Austin, ...	44.96	
Abner W. Buttrick, ...	596.28	
Adams Ayer, ...	42.04	
Interest on Beneficiary money returned, ...	89.19	1,034.59
Term Bills.		
For Instruction, ...	1,483.35	
For Rents, ...	1,465.77	2,949.12
Balance of appropriation for books repaid, ...		124.37
Benjamin Bussey Trust. One-fourth of net income for use of this School, ...		2,342.53
		$25,376.65

PAYMENTS.

For Salaries for Instruction, ...	$17,900.00
Services of students, ...	200.00
Labor, repairs, and improvements, ...	514.53
Cleaning and care of rooms, ...	575.60
Books and binding, ...	40.22
Printing, ...	7.75
Fuel, ...	6.25
Gas, ...	104.64
Water rates, ...	30.00
Diplomas and sundries, ...	20.85
Collation, ...	56.25
Advertising, ...	2.80
Proportion of expenses of Bursar's office, ...	60.49
" " " " Gymnasium, ...	134.48
Stationery and postage.	23.43
Amount carried forward, ...	$19,677.29

TABLE IV., CONTINUED.

PAYMENTS.

Amount brought forward,		$19,677.29
Paid the incumbents of the following Scholarships.		
Jackson Foundation,	$640.00	
Cary,	350.00	
Nancy Kendall,	93.33	
		1,083.33
		$20,760.62

TABLE NO. V.

LAW SCHOOL.

RECEIPTS.

Income of the following funds.		
Law School Balance,	$453.08	
Nathan Dane,	885.15	
Benjamin Bussey Professorship,	1,347.68	
Isaac Royall,	468.76	
New Professorship,	2,250.00	
Law School Book Fund,	480.00	
" " Building "	763.65	
Benjamin Bussey Trust (½ of net income for use of this School),	2,342.53	
		8,990.85
Term Bills.		
For instruction,		22,550.00
Anonymous gift for the erection of a new building,		135,000.00
		$166,540.85

PAYMENTS.

For Salaries for Instruction,	$21,225.00	
Librarian and Assistants,	2,650.00	
Janitor and coat-room boy,	761.86	
Books and binding,	2,477.45	
Fuel,	532.90	
Gas,	304.80	
Printing	167.50	
Scholarships,	750.00	
Labor, repairs, and improvements,	235.90	
Stationery and postage,	80.35	
Freight, diplomas, and sundries,	81.57	
Water rates,	61.42	
Furniture,	12.25	
Account of new building,	10,623.85	
Services of examiners and proctors,	56.75	
Proportion of expenses of Bursar's office,	314.95	
" " " " Gymnasium,	700.24	
		$41,036.79

Table No. VI.

MEDICAL SCHOOL.

RECEIPTS.

Income of the following Funds.		
Medical School, balance,	$3,342.16	
Jackson Medical,	1,078.65	
Warren, for Anatomical Museum,	646.19	
Ward Nicholas Boylston, for Medical Prizes,	220.14	
Ward Nicholas Boylston, for Medical Books,	121.34	
George C. Shattuck,	962.65	
Hersey Professorship, two-fifths income of the fund,	433.45	
Medical Library Fund,	139.94	
Medical School Building Fund,	5,278.60	
Quincy Tufts,	112.40	
Edward M. Barringer,	42.99	
John Foster, income for Medical students every third year,	178.27	12,556.78
From students for instruction,	47,395.90	
" " for graduation fees,	2,580.00	
" " in Chemical Laboratory, breakage and chemicals,	1,024.64	
" " in Practical Anatomy, for material,	415.00	51,415.54
Subscriptions to the Building Fund,		15,600.00
		$79,572.32

PAYMENTS.

Boylston Medical Prizes. Prizes,	$300.00		
Advertising,	49.00	349.00	
Warren Anatomical Museum.			
Expenses, and additions to collection,		112.42	
Chemical Laboratory, apparatus, chemicals, and wages,		1,376.50	
Physiological Laboratory, expenses and wages,		1,008.34	
Practical Anatomy and Surgery Expenses,		1,864.94	
Topographical Anatomy Expenses,		45.00	
Obstetrics Expenses,		321.75	
Histology "		36.51	
Materia Medica "		47.56	
Salaries for instruction,		37,743.44	
Repairs and improvements,		425.38	
Scholarships,		1,300.00	
For account of new building,		81,229.68	125,860.52
General Expenses.			
Advertising and catalogues,		$708.58	
Alcohol,		39.75	
Books from Library Fund,		5.00	
Cleaning,		259.13	
Amounts carried forward,		$1,012.46	$125,860.52

TABLE VI., CONTINUED.

PAYMENTS.

Amounts brought forward,	$1,012.46	$125,860.52
Clerk,	700.00	
Diplomas,	89.87	
Doorkeeper,	60.00	
Expenses collecting subscriptions,	38.40	
Faculty meetings,	172.35	
Fuel,	344.80	
Gas,	481.00	
Janitor,	1,200.00	
Librarian,	20.00	
Printing,	251.00	
Rent of rooms (in part) for Pathological specimens,	200.00	
Rent and heating of rooms for Chemical Laboratory,	600.00	
Services of Examiners,	15.00	
Stationery, postage, and sundries,	165.64	
Travelling expenses,	70.29	
Water rates,	93.97	5,514.78
		$131,375.30

TABLE NO. VII.

DENTAL SCHOOL.

RECEIPTS.

Income of Subscription Fund,	$18.71	
From Students,	4,000.00	
Infirmary,	559.07	
Laboratory,	182.00	
Rent of a part of the School building,	245.00	
		$5,004.78

PAYMENTS.

Advertising and catalogues,	$114.50	
Care of operating room at hospital, and cleaning,	69.50	
Drugs, chemicals, and sundries,	83.08	
Diplomas,	9.43	
Expenses in Oral Pathology and Anatomy,	75.00	
" " Dental Therapeutics,	92.00	
Fuel,	146.15	
Gas,	15.40	
Gold foil and metals,	237.22	
Instruments and apparatus,	401.85	
Interest on debt,	949.96	
Printing,	28.50	
Repairs to building,	145.45	
Salaries of demonstrators,	1,100.00	
Stationery and postage,	72.95	
Taxes,	108.42	
Water rates,	11.00	
To Subscription Fund, Dr. Silva's subscription (entered as a gift for immediate use last year),	5.00	$3,665.41

TABLE NO. VIII.

LAWRENCE SCIENTIFIC SCHOOL.

RECEIPTS.

Income of the following Funds.			
Professorship of Engineering,		$2,180.95	
Professorship of Chemistry,		160.79	
Abbott Lawrence,		3,458.32	
James Lawrence,		2,831.08	
John B. Barringer. Interest,	$1,600.97		
From special investment,	200.00	1,800.97	
Gray Fund for Zoölogical Museum,		2,810.00	
Sturgis Hooper,		5,620.00	
Agassiz Memorial. Interest,	$15,077.00		
From special investment,	1,482.94	16,559.94	
Teachers and Pupils,		426.78	
Humboldt,		435.04	
Permanent Fund for Museum of Zoölogy,		6,601.76	
			42,885.63
Term Bills, for Instruction,			4,985.00
			$47,870.63

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.		
Gray,	$2,810.00	
Agassiz Memorial,	11,907.88	
Teachers and Pupils,	426.78	
Humboldt,	435.04	
Permanent,	6,601.76	22,181.46
Salaries for instruction,	17,258.32	
Expenses in Geology,	516.65	
Stationery postage, and sundries,	15.85	
Proctorial services,	26.25	
Books, Engineering Department,	89.30	
Instruments and apparatus,	476.12	
Printing,	43.00	
Fuel,	369.12	
Gas,	19.20	
Janitor and cleaning,	523.00	
Labor and repairs,	232.33	
Expenses Chemical Laboratory (part of),	50.97	
Scholarships,	600.00	
Interest on advances,	294.31	
Water rates,	19.77	
Proportion of expenses of Bursar's office,	62.58	
" " " " Gymnasium,	139.12	
		20,735.89
		$42,917.35

TABLE No. IX.

OBSERVATORY.

RECEIPTS.

Income of the following Funds.		
Observatory, balance,	$374.01	
Edward B. Phillips,	6,198.52	
James Hayward,	1,180.20	
David Sears,	1,226.68	
Josiah Quincy,	683.50	
James Savage (½ of net income),	1,030.20	
Charlotte Harris,	112.40	
		10,805.51
Subscriptions, for immediate use,		3,330.00
From sale of time signals,		2,850.00
		$16,985.51

PAYMENTS.

Salaries and wages,	$13,375.53	
Cleaning and care of Observatory,	234.07	
Gas,	71.76	
Instruments and apparatus, including repairs on same,	1,430.00	
Repairs and improvements on buildings and grounds,	882.52	
Stationery, postage, and telegraphing,	240.17	
Fuel,	116.29	
Books and binding,	225.17	
Water rates,	50.00	
Printing,	63.70	
Freight and sundries,	114.68	
Chemicals,	24.95	
Watering streets,	32.50	
		$16,861.34

TABLE No. X.

BUSSEY INSTITUTION.

RECEIPTS.

From **Bussey** Trust (½ net income),	$4,685.06	
From **Bussey** Building Fund (net income),	707.04	
Fees for Instruction,	410.00	
Sale of coal to Arboretum,	74.16	
From **Arnold** Arboretum for rent of greenhouses,	50.00	
		$5,926.26

PAYMENTS.

For Salaries,	$4,220.00	
Books,	23.43	
Stationery and postage, cleaning, gas, &c.,	44.56	
Fuel for school building,	8.00	
Wages,	174.50	
Horticultural Department, expenses,	577.73	
Repairs and improvements,	47.49	
Printing,	25.00	
		$5,120.71

TABLE X., CONTINUED.

Bussey Building Fund.

Receipts.

Income of unexpended balance of Fund, ...	$207.04	
Estimated value of use of house by Prof. Storer, . . .	500.00	
		$707.04

Payments.

Repairing greenhouses and gardener's house, ...	$801.72	
Income carried to Bussey Institution, ...	707.04	
		1,508.76

James Arnold Fund.

Receipts.

Income of Fund, ...	$8,500.14

Payments.

19/20 of income carried to Arnold Arboretum, ...	$8,075.13

Arnold Arboretum.

Receipts.

Income of unexpended balance of Fund, ...	$446.12	
From James Arnold Fund, ...	8,075.13	
		$8,521.25

Payments.

Salary of Director and Assistant, ...	$2,900.00	
Expenses of Arboretum, ...	3,609.10	
		$6,509.10

TABLE NO XI.

MISCELLANEOUS FUNDS.

Bussey Trust.

Receipts.

Net income from Real Estate, ...	$16,170.12

Payments.

Annuities, ...	$6,800.00	
One-half of the remaining income to Bussey Institution,	4,685.06	
One-quarter " " " Divinity School, .	2,342.53	
" " " " " Law School, . . .	2,342.53	
		$16,170.12

Gray Fund for Engravings.

Receipts.

Interest on Fund, ...	$881.95	
From sale of catalogues, ...	20.00	
		$901.95

Payments.

To the Treasurer of the Museum of Fine Arts, . .	$650.00	
For freight, &c., ...	3.28	
		$653.28

Annuity Funds.

Receipts.

Gore, income,	$1,167.61	
Mary Osgood, income,	410.93	
Lucy Osgood, income,	725.54	
Anonymous Observatory, income,	720.00	
Bemis, income,	2,810.00	
		$5,834.08

Payments.

Gore, annuities,	$900.00	
Mary Osgood, annuity,	360.00	
Lucy Osgood, annuities,	780.00	
Anonymous Observatory, annuity,	720.00	
Bemis, annuity,	2,752.50	
		$5,512.50

Daniel Williams Fund.

Receipts.

Interest on Fund,		$904.54

Payments.

Treasurer of Herring Pond Indians,	$366.81	
" " Mashpee Indians,	582.13	
		$948.94

Sarah Winslow Fund.

Receipts.

Interest on Fund,		$271.11

Payments.

Minister at Tyngsborough, Mass.,	$126.44	
Teacher at " "	126.44	
Commission on income credited to University,	6.49	
		$259.37

James Savage Fund.

Receipts.

Interest on Fund,		$2,360.40

Payments.

Scholarship,	$300.00	
One-half the remaining income to Library,	1,030.20	
" " " " Observatory,	1,030.20	
		$2,360.40

Bright Legacy.

Receipts.

Interest on Fund,		$2,810.00

Payments.

One-half income to **Bright** Book Fund,	$1,405.00	
To Scholarship Fund,	1,945.17	
		$3,350.17

TABLE XI., CONTINUED.

Sundry Accounts.

Receipts.

Gain from change of investm't for Bowditch Scholarships,	$11,275.00	
Chinese Subscriptions paid and fee for instruction, . .	1,502.68	
Advances to books from "General Investments," . . .	29.36	
Bright Scholarship balance transferred, ...	540.17	
Dr. Silva's subscription to Dental School transferred,	5.00	
		$13,352.21

Payments.

Gore Annuity Fund, spent in improving Gore Hall, .	$483.05	
Sever Hall Fund, balance of account spent on building,	465.31	
Expenses of Chinese Instructor, salary, and travelling expenses, ...	4,082.81	
Annuity for Class of 1802, ...	120.00	
Advance to Geological Dept. to be repaid next year, .	.25	
Advances repaid, to		
Agassiz Memorial Fund, ...	4,652.06	
Dental School, ...	1,339.37	
Lawrence Scientific School, ...	197.87	
Chinese Subscription, ...	374.38	
Baring Bros. & Co., ...	361.67	
		12,076.77

Gospel Church Fund (accumulating).	Interest on Fund, . . .	$134.54
Robert Troup Paine Fund "	From special investment,	1,071.59

GENERAL SUMMARY OF THE TABLES.

		Receipts.	Payments
Table I.	University,	26,492.52	30,644.41
Table II.	College,	244,655.59	223,982.23
Table III.	Library,	16,550.01	30,787.92
Table IV.	Divinity School,	25,376.65	20,760.62
Table V.	Law School,	166,540.85	41,036.79
Table VI.	Medical School,	79,572.32	131,375.30
Table VII.	Dental School,	5,004.78	3,665.41
Table VIII.	Lawrence Scientific School,	47,870.63	42,917.35
Table IX.	Observatory,	16,985.51	16,861.34
Table X.	Bussey Institution,	5,926.26	5,120.71
	Bussey Building Fund,	707.04	1,508.76
	James Arnold Fund,	8,500.14	8,075.13
	Arnold Arboretum,	8,521.25	6,509.10
Table XI.	Bussey Trust,	16,170.12	16,170.12
	Gray Fund for Engravings,	901.95	653.28
	Annuity Funds,	5,834.08	5,512.50
	Daniel Williams Fund,	904.54	948.94
	Sarah Winslow Fund,	271.11	259.37
	James Savage Fund,	2,360.40	2,360.40
	Bright Legacy,	2,810.00	3,350.17
	Sundry Accounts,	13,352.21	12,076.77
	Gospel Church Fund,	134.54	
	Robert Troup Paine Fund,	1,071.59	
		696,514.09	604,576.62
		604,576.62	
	Balance	$91,937.47	

Which is the net increase of the Funds and balances, excluding gifts for capital account, as also shown on page 25.

Certificate of the Joint Committee of the Corporation and Overseers of Harvard College, for examining the Books and Accounts of the Treasurer entered in the Journal kept by him.

WE, the undersigned, a joint committee of the Corporation and Overseers of Harvard College to examine the books and accounts of the Treasurer for the year ending August 31, 1882, have examined and audited the Cash book from pages 122 to 161, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were received by him and on hand at the beginning of said year, are now in his possession, or are fully accounted for by entries made therein. We have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

We have carefully examined all notes, bonds, mortgages, and other securities invested during the said year, and are of opinion that all such investments have been judiciously made and are amply secured.

We have in like manner satisfied ourselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

The Committee have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

FRANCIS PARKMAN, JOHN QUINCY ADAMS,	*Committee on the part of the Corporation.*
HENRY P. KIDDER, AMOS A. LAWRENCE, CHARLES HENRY PARKER, ISRAEL M. SPELMAN, SOLOMON LINCOLN,	*Committee on the part of the Board of Overseers.*

Boston, Dec. 9, 1882.

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ANNUAL REPORTS

OF THE

PRESIDENT AND TREASURER

OF

HARVARD COLLEGE.

1882-83.

CAMBRIDGE:
UNIVERSITY PRESS: JOHN WILSON AND SON.
1883.

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1883.

PRESIDENT'S REPORT FOR 1882-83.

To the Board of Overseers:—

The President of the University has the honor to submit the following Report for the Academic year 1882–83; namely, from Sept. 28, 1882, to Sept. 27, 1883:—

On the 29th of October, 1882, Mr. Lester Sackett Ford, Demonstrator in Zoölogy at the Bussey Institution, and at the time a house-officer at the Massachusetts General Hospital, died at that hospital of typhoid fever, after a brief illness. Mr. Ford took the degree of Bachelor of Agricultural Science in 1879, being the first graduate of the Bussey Institution, and at the time of his death had also completed his course for the degree of Doctor of Medicine. He was a young man of great promise, who by remarkable mental powers and rare beauty and force of character, had won his way through serious obstacles to the gateway of a profession which he would have adorned. His untimely death was mourned by all who knew him.

Assistant-Professor Adrien Jacquinot died in Cambridge on the 21st of September, 1883, near the end of the long vacation and soon after his return from a summer visit to France. He had been in the service of the University for eleven years, and had so won the respect and affection of his colleagues and his pupils by his simplicity, amiability, and disinterestedness, that although he died far from his kindred and in a strange land, he died among friends whose attachment could hardly have been greater had they been the friends of his youth. Professor Jacquinot's teaching gave evidence not only of thorough acquaintance with French literature, but of keen appreciation of what is best in all literature. He loved his College work, and gave in his devotion to it a precious example of industry and fidelity.

RESIGNATIONS.

Daniel Denison Slade, Professor of Applied Zoölogy, November 6, 1882.
Francis Winthrop Dean, Tutor in Engineering, November 6, 1882.
Henry Burleigh Wenzell, Proctor, November 6, 1882.
Oliver Wendell Holmes, Professor of Anatomy, November 20, 1882.
Samuel Hubbard Scudder, Assistant Librarian, December 11, 1882.
Edwin Perley Bradbury, Clinical Instructor in Operative Dentistry, December 22, 1882.
Oliver Wendell Holmes, Jr., Professor of Law, January 8, 1883.
Dwight Moses Clapp, Clinical Instructor in Operative Dentistry, January 29, 1883.
Calvin Ellis, Dean of the Medical Faculty, June 25, 1883.

David Humphreys Storer, Henry Jacob Bigelow, Richard Manning Hodges, Samuel Cabot,	Boylston Prize Committee, June 25, 1883.

Frank Er Balch, Steward of the Harvard Dining Association, June 25, 1883.
Manuel Jacob Drennan, Instructor in English, June 27, 1883.
Henry Champion Jones, Assistant in Botany, June 27, 1883.
George Henry Browne, Proctor, September 1, 1883.
Charles Elliott St. John, Proctor, September 1, 1883.
George Lyman Kittredge, Proctor, September 1, 1883.
William Schofield, Proctor, as of September 1, 1883.
Henry Champion Jones, Proctor, as of September 1, 1883.
Henry Nathan Wheeler, Proctor, as of September 1, 1883.
Edward Cornelius Briggs, Clinical Instructor in Operative Dentistry, as of September 1, 1883.
Charles Frederic Mabery, Assistant in Chemistry, September 26, 1883.
Edward Hale, Proctor and President's Secretary, September 26, 1883.

The Corporation accepted with great regret the resignation of Dr. Daniel Denison Slade, Professor of Applied Zoölogy at the Bussey Institution since 1871. Professor Slade had always given the instruction in his department with perfect punctuality and acceptance, until serious illness came upon him in the winter of 1881–82. The succeeding summer in great measure restored his health; but it was not considered prudent for him to undertake to keep the stated appointments which are incumbent upon a teacher. The University thus lost a teacher of scientific spirit, wide information, and strong sense of duty.

Dr. Oliver Wendell Holmes resigned the professorship of Anatomy in November, 1882, after a continuous service of thirty-five years as Parkman Professor, first of Anatomy and Physiology, and then of Anatomy. During all these years, Dr. Holmes has given a large part of his time and strength to the routine of instructing medical students in the elements of human anatomy (and of physiology until 1872), and he has done this work with as much punctuality, thoroughness, and ardor, as if he had no other interest or occupation. Accustomed for twenty-four years to the old *régime* of the School, Dr. Holmes was not an active promoter of the revolution of 1870–71; but he readily entered into the new plans, and greatly enjoyed the improvements which resulted from their adoption. The Corporation and Overseers endeavored to express their sense of the obligations under which Dr. Holmes had laid the Medical School, by electing him Professor Emeritus. The students and the Faculty gave strong expression to their regret at his withdrawal, and will long miss the influence of his erudition, literary fame, and kindly wit.

In June last, Dr. Calvin Ellis, Professor of Clinical Medicine, resigned on account of ill health the position of Dean of the Medical Faculty, which he had held since 1869, during a period of rapid and fundamental changes in the organization and spirit of the School. His influence as Dean was always exerted on the side of thoroughness, liberality, and highmindedness; he preferred the interest of the School to the interest ot any individual, whether teacher or student, and the interest of the community to the immediate interest of the School; he actively furthered all the many improvements made by the Faculty during his long term of office; and the great change made in 1870–71 could not have been effected without his support, — a support which was as steady and strong as it was indispensable.

APPOINTMENTS.

[UNLIMITED, OR FOR TERMS LONGER THAN ONE YEAR.]

OLIVER WENDELL HOLMES, to be Emeritus Professor of Anatomy, November 20, 1882.

THOMAS FILLEBROWN, to be Professor of Operative Dentistry, January 8, 1883.

MANUEL JACOB DRENNAN, to be Assistant Professor of English for five years from September 1, 1883, February 26, 1883.

ASA GRAY, to be Director of the Herbarium, April 9, 1883.

JAMES GREENLEAF CROSWELL, to be Assistant Professor of Greek and Latin for five years from September 1, 1883, April 9, 1883.

SILAS MARCUS MACVANE, to be Assistant Professor of History for five years from September 1, 1883, April 9, 1883.

ERNEST YOUNG, to be Assistant Professor of History for five years from September 1, 1883, April 9, 1883.

JAMES BRADSTREET GREENOUGH, to be Professor of Latin, April 23, 1883.

CLEMENT LAWRENCE SMITH, to be Professor of Latin, April 23, 1883.

GEORGE HERBERT PALMER, to be Professor of Philosophy, April 23, 1883.

ARTHUR SEARLE, to be Assistant Professor of Astronomy for five years from June 1, 1883, April 30, 1883.

WILLIAM ALBERT KEENER, to be Assistant Professor of Law for five years from September 1, 1883, May 14, 1883.

JAMES LAURENCE LAUGHLIN, to be Assistant Professor of Political Economy, for five years from September 1, 1883, May 14, 1883.

CHARLES ALBERT BRACKETT, to be Professor of Dental Pathology and Therapeutics, May 14, 1883.

THOMAS DWIGHT, to be Parkman Professor of Anatomy, June 11, 1883.

HENRY PICKERING BOWDITCH, to be Dean of the Medical Faculty, June 25, 1883.

WILLIAM MORRIS DAVIS, to be Instructor in Geology from September 1, 1882, April 23, 1883.

BARRETT WENDELL, to be Instructor in English, June 25, 1883.

LE BARON RUSSELL BRIGGS, to be Instructor in English, June 25, 1883.

Frederick Bradford Knapp, to be Instructor in Surveying and Drawing, June 25, 1883.

Charles Pomeroy Parker, to be Tutor in Greek and Latin for three years from September 1, 1883, June 25, 1883.

Maurice Howe Richardson, to be Demonstrator of Anatomy, June 11, 1883.

John Rayner Edmands, to be Assistant in Observatory in charge of Time Service, February 14, 1883.

John Ritchie, Jr., to be Assistant in Observatory in charge of Distribution of Astronomical Information, February 14, 1883.

Frederick Bradford Knapp, to be Superintendent of Buildings and Grounds from April 24, 1883, April 23, 1883.

Jeremiah J. Sullivan, to be Steward of the Memorial Hall Dining Association from September 1, 1883, August 27, 1883.

[FOR ONE YEAR OR LESS.]

For 1882–83.

Edward Hale, to be President's Secretary, October 9, 1882.

Barrett Wendell, to be Instructor in English, October 9, 1882.

Charles Maynard Barnes, to be Instructor in Sales, October 9, 1882.

Henry Grosvenor Carey, to be Instructor in Vocal Music, November 6, 1882.

Frederick Bradford Knapp, to be Instructor in Surveying and Drawing, November 6, 1882.

Francis Amasa Walker, to be University Lecturer on the Tenure of Land, November 20, 1882.

G. Stanley Hall, to be University Lecturer on Pedagogy, December 22, 1882.

Charles Pomeroy Parker, to be Instructor in Greek and Latin from January 3, January 8, 1883.

Dwight Moses Clapp, to be Clinical Instructor in Operative Dentistry November 6, 1882.

Daniel Taylor Hinckley, to be Demonstrator in Anatomy, November 20, 1882.

Oliver Mayhew Whipple Huntington, to be Assistant in Chemistry, October 9, 1882.

George Lyman Kittredge, to be Proctor, November 20, 1882.

Herbert Morison Clark, to be Proctor, November 20, 1882.

Arthur Lawrence Hall, to be Proctor, November 20, 1882.

For 1883–84.

Joseph Henry Thayer, to be Lecturer on Biblical Theology, April 23, 1883.

Edward Perkins Channing, to be Instructor in History, May 30, 1883.

Albert Bushnell Hart, to be Instructor in American History, May 30, 1883.

Harold Whiting, to be Instructor in Physics, May 30, 1883.

Frank William Taussig, to be Instructor in Political Economy, May 30, 1883.

Charles Edward Faxon, to be Instructor in Botany, June 11, 1883.

Benjamin Marston Watson, to be Instructor in Horticulture, June 11, 1883.

Edward Burgess, to be Instructor in Entomology, June 11, 1883.

Freeman Snow, to be Instructor in Forensics, June 11, 1883.

Josiah Royce, to be Instructor in Philosophy, June 11, 1883.

Henry Dixon Jones, to be Instructor in Elocution, June 25, 1883.

Joseph Randolph Coolidge, to be Instructor in Spanish, June 25, 1883.

Alfred Church Lane, to be Instructor in Mathematics, September 26, 1883.

Charles Frederic Mabery, to be Assistant in Chemistry, June 11, 1883.

George Trumbull Hartshorn, to be Assistant in Organic Chemistry, June 11, 1883.

Oliver Mayhew Whipple Huntington, to be Assistant in Chemistry, June 11, 1883.

George William Perkins, to be Assistant in Biology, June 11, 1883.

Charles Harrington, to be Assistant in Chemistry, June 25, 1883.

Charles Pomeroy Worcester, to be Assistant in Chemistry, September 26, 1883.

Robert Henry Harrison, to be Instructor in Anatomy, April 23, 1883.

John Homans, to be Clinical Instructor in the Diagnosis and Treatment of Ovarian Tumors, June 11, 1883.

Francis Boott Greenough, to be Clinical Instructor in Syphilis, June 11, 1883.

Oliver Fairfield Wadsworth, to be Clinical Instructor in Ophthalmoscopy, June 11, 1883.

Samuel Gilbert Webber, to be Clinical Instructor in Diseases of the Nervous System, June 11, 1883.

Clarence John Blake, to be Clinical Instructor in Otology, June 11, 1883.

John Orne Green, to be Clinical Instructor in Otology, June 11, 1883.

Amos Lawrence Mason, to be Clinical Instructor in Auscultation, June 11, 1883.

James Read Chadwick, to be Clinical Instructor in Diseases of Women, June 11, 1883.

Abner Post, to be Clinical Instructor in Syphilis, June 11, 1883.

James Jackson Putnam, to be Clinical Instructor in Diseases of the Nervous System, June 11, 1883.

Joseph Pearson Oliver, to be Clinical Instructor in Diseases of Children, June 11, 1883.

FREDERICK CHEEVER SHATTUCK, to be Clinical Instructor in Auscultation, June 11, 1883.

THOMAS MORGAN ROTCH, to be Clinical Instructor in Diseases of Children, June 11, 1883.

FRANK WINTHROP DRAPER, to be Lecturer on Forensic Medicine, June 11, 1883.

CHARLES SEDGWICK MINOT, to be Lecturer on Embryology, June 11, 1883.

EDWARD NEWTON WHITTIER, to be Instructor in the Theory and Practice of Physic, June 11, 1883.

WILLIAM PALMER BOLLES, to be Instructor in Materia Medica, June 11, 1883.

FRANCIS AUGUSTINE HARRIS, to be Demonstrator of Medico-Legal Examinations, June 11, 1883.

JOSEPH WEATHERHEAD WARREN, to be Instructor in Oral Pathology and Anatomy, May 30, 1883.

TIMOTHY OTIS LOVELAND, to be Clinical Instructor in the Dental School, May 30, 1883.

CHARLES WILSON, to be Clinical Instructor in the Dental School, May 30, 1883.

ALBERT BENTON JEWELL, to be Clinical Instructor in the Dental School, May 30, 1883.

EUGENE HANES SMITH, to be Clinical Instructor in the Dental School, May 30, 1883.

EDWARD CORNELIUS BRIGGS, to be Clinical Instructor in the Dental School, May 30, 1883.

GEORGE FRANKLIN GRANT, to be Demonstrator in Mechanical Dentistry, May 30, 1883.

VIRGIL CLARENCE POND, to be Demonstrator in Operative Dentistry, May 30, 1883.

HENRY PARKER QUINCY, to be Assistant in Histology, June 11, 1883.

EDWARD HICKLING BRADFORD, to be Assistant in Clinical Surgery, June 11, 1883.

FRANCIS HENRY DAVENPORT, to be Assistant in Gynaecology, June 11, 1883.

GEORGE MINOT GARLAND, to be Assistant in Clinical Medicine, June 11, 1883.

JOSEPH WEATHERHEAD WARREN, to be Assistant in Physiology, June 11, 1883.

WILLIAM WHITWORTH GANNETT, to be Assistant in Pathological Anatomy, June 11, 1883.

WILLIAM CARROLL EMERSON, to be Assistant in Chemistry, June 11, 1883.

SAMUEL JASON MIXTER, to be Assistant in Anatomy, June 11, 1883.

WALTER JOSEPH OTIS, to be Assistant in Anatomy, June 11, 1883.

ROBERT HENRY HARRISON, to be Assistant Surgeon of the Veterinary Hospital, June 25, 1883.

JOHN DOWNER PENNOCK, to be Proctor, September 26, 1883.
CHARLES POMEROY WORCESTER, to be Proctor, September 26, 1883.
EDWARD SOUTHWORTH HAWES, to be Proctor, September 26, 1883.
CHARLES AUSTIN HOBBS, to be Proctor, September 26, 1883.
FREDERICK SILAS GREGORY REED, to be Proctor, September 26, 1883.

JULIAN CLIFFORD JAYNES, to be Proctor of Divinity Hall, June 11, 1883.
ARTHUR ANDERSON BROOKS, to be Librarian of the Divinity School, June 11, 1883.

WILLIAM GRAY, HENRY J. BIGELOW, and THOMAS G. APPLETON, to be Trustees of the Museum of Fine Arts for one year, from January 1, 1883, December 11, 1882.

The moderate increase in the number of students attending the University which the past eight years have witnessed has come, not from New England, but in the main from the Middle and Western States. The slow increase of the native population in New England, the efflux of enterprising young men and well-to-do families to the Western States and Territories, and the influx of foreigners, many of whom belong to the church of Rome, would cause, temporarily at least, a decline of the New-England colleges, were not these colleges fed more and more from the other States of the Union. Sixty years ago seventy-nine per cent of the students in the University came from New England; thirty years ago seventy-five per cent; three years ago seventy-two per cent; but now only sixty-seven per cent. During the past three years the percentage of students from Massachusetts has fallen from sixty-one and a half to fifty-four. Sixty years ago the Southern States contributed nearly one fifth of the whole number of students; but that section of the country, though greatly expanded in the mean time, now contributes only a little over three per cent. The following table exhibits the progressive increase in the percentage of students from the Middle and Western States.

	1820-21.	1850-51.	1880-81.	1883-84.
Middle	2.4	8.6	13.	16.8
Western	0.0	2.6	9.6	11.7

The most remarkable increase is that from the Middle States, and this increase is particularly striking in the College proper. More than one fifth of the College students now come from the Middle States. The number of graduates of the University who settle in the Middle and Western States has been rapidly increasing of late, many of them soon filling places of trust and influence. They exert themselves to improve the preparatory schools in their vicinity, or to found new ones; and by example and precept they suggest to young men that it is expedient to get thorough training for professional or active life. Conspicuous examples of the influence thus exerted by Harvard graduates have been seen in recent years in New York, Philadelphia, Buffalo, Cleveland, Cincinnati, Indianapolis, and San Francisco. It is an influence which not only benefits this University, but also improves the secondary and higher education in general throughout the country. Since about three hundred young men are now graduated yearly at the University, and are dispersed hence far and wide over the Union, and since the country becomes constantly more compact through the rapid extension and improvement of railroads and telegraphs, so that the situation of the University upon the eastern edge of the continent is less and less an obstacle to its growth, it is to be expected that the proportion of its students from beyond New England will continue to increase.

The number of special students in the University (students not candidates for a degree) increases, and is likely to increase; for all the privileges of University membership are open to them, except that of winning a degree and so gaining admission to the quinquennial catalogue.

Special Students in the	1880-81.	1881-82.	1882-83.	1883-84.
College	15*	34*	46	67
Divinity School	7	9	6	7
Law "	29	29	19	27
Scientific "	26	17	11	13
University	77	89	82	114

* Unmatriculated students.

The amount of the tuition-fees paid by special students during the current year will be about $16,000, and during the three preceding years the amount of these fees was on the average about $11,000 a year. The special students in the College proper are on the average nearly two years older than the Freshmen; and sixty-one per cent of them come from beyond New England. Of the sixty-seven persons registered in College as special students for the current year, nine are persons who failed in June or in September, or in both months, to pass the examinations for admission to the Freshman class, thirteen are present for a second year, and one for a third year. In all four of the departments included in the table every grade of scholarship, from very high to very low, is found among the special students. Upon this point interesting details are given in the report of the Dean of the College Faculty (p. 49). It will also be seen in the Dean's report that of the forty-two special students who completed the year 1882–83 in the College, ten were subsequently admitted to some College class. The provisions now made for special students are useful: 1. To persons who wish to devote themselves to single subjects, and do not care for a degree; 2. To young men of good parts who have been prevented from getting, at the usual age, the common training preparatory to college life; 3. To those who are physically unequal to the labor and competition of the regular course, but who can do well a smaller amount of quiet work; 4. To the slow and dull whose fathers can afford to give them the general advantages of a residence at the University.

As all these varieties of ability, purpose, and condition, are now represented in every degree among the special students, these students constitute, as might be supposed, a miscellaneous body of young men without common characteristics or common life. It was precisely to meet these diverse needs, which arise so naturally in the present condition of American society, that special students were admitted to the University. Among them have been found, in each of the last five or six years men of excellent capacity and character who were very poor, and who suffered, or failed, for that reason in their struggle for education. The University possesses no scholarships, or other beneficiary aids, accessible to persons who are not candidates for a degree. In so considerable a body of special students as is now in attendance, good use could be made of some endowments for aiding capable men, after suitable probation, in any of the various departments to which special students resort.

For many years a large proportion of the regular students in the Schools of Divinity, Law, and Medicine at this University have been graduates of Harvard College or of other institutions. At present nearly three fifths (238 out of 410) of the regular members of these Schools have previously taken academic degrees, one hundred and thirty-five at Harvard University, and one hundred and three at other institutions. On the other hand, the attendance of graduates in any number, whether of this institution or of others, for purposes of study outside of the regular classes of these three professional schools, was hardly witnessed here until within the past ten years, with the important but temporary exception that the Lawrence Scientific School, before 1867, generally contained from twelve to twenty bachelors of arts or science who were pursuing chemistry, engineering, comparative anatomy or zoölogy as specialties. During the past year seventy-nine graduates (48 of Harvard, and 31 of other institutions) were pursuing their studies here, not including graduates who were members of the regular classes in the three professional schools; and the catalogue of the current year exhibits ninety-eight such graduates (54 of Harvard, and 44 of other institutions). The following tables show

Persons studying here after taking degrees at other institutions (not including regular members of the three professional schools).	1871-72.	1874-75.	1877-78.	1880-81.	1881-82.	1882-83.	1883-84.
As candidates for the A.B. (members of the College classes)	..	5	7	2	12	18	16
As College special students	..	..	1*	1*	..	3	2
As resident graduates at the Divinity School	..	..	..	..	3	3	3
As Divinity special students	1	..	1	3	1	1	2
As Law special students	..	..	3	1	2	1	3
As Scientific students	3	..	..	1	..	..	..
As resident graduates not candidates for any degree	1	..	..	..	2	..	7
As candidates for the degree of A.M., PH.D., or S.D.	..	2	7	4	8	5	11
Total	5	7	19	12	28	31	44

* Then called unmatriculated.

Harvard A.B.s and S.B.s pursuing studies here (not including regular members of the three professional Schools).	1871-72.	1874-75.	1877-78.	1880-81.	1881-82.	1882-83.	1883-84.
As Divinity resident graduates	*1	1	..	..	1	..	..
As Divinity special students	..	..	1	..	1	1	1
As Law special students	..	..	2	3	1	..	3
As Scientific students	3	6	..	2	1	..	..
As resident graduates not candidates for a degree	8	10	8	2	1	4	7
As candidates for the degree of A.M., PH.D., or S.D.	2	38	44	30	33	43	43
Total	14	55	55	37	38	48	54

* University student of Theology.

the various ways in which these graduates of other colleges and of Harvard College have connected themselves with the University in every year since 1880 and at three periods taken three years apart before 1880.

These ways of entering the University are all open to graduates without any examination, except that a graduate of another institution who desires to enter the College as a candidate for the Harvard degree of Bachelor of Arts must satisfy the College Faculty as to his previous course of study and his proficiency therein, and that a graduate of another institution who desires to become a candidate for a degree higher than that of Bachelor must satisfy the appropriate Faculty that the course of study for which he received his Bachelor's degree (reinforced perhaps by extra studies) is equivalent to that for which the same degree is given in Harvard University. The tables show that good progress has been made within ten years in this important branch of the work of the University; but they also indicate that there is ample room for further development. The various and abundant instruction here offered has been made reasonably accessible to all persons who are able to profit by it, so far as regulations conceived in a liberal and hospitable spirit can make it accessible. There remain two hindrances to the growth of the graduate department, — in the first place, it is a new and comparatively unknown department, the privileges of which are as yet but little understood; and in the second place it possesses no scholarships or other beneficiary aids. An annual income of ten thousand dollars could be well used at once in scholarships for graduate students in arts.

The Academic Council early in the year 1883 adopted two new rules with regard to the Master's degree (see the report of the Secretary, p. 78) which are expected to increase considerably the number of suitable candidates for that grade. The first of the new rules provides that studies pursued in the Professional and Scientific Schools will be approved by the Council as constituents of the one year's course of liberal study which is required of every candidate for the Master's degree, on condition that the candidate do not count the same studies towards a professional degree; and the second provides that members of the Schools of Divinity, Law, Medicine, and Science, who are already Bachelors of Arts, may obtain the degree of Master of Arts simultaneously with their professional degree, if they pass the examinations of their respective Schools with high credit, and follow the longest course of study and residence provided for the professional degree. The first of these rules treats professional studies as liberal, and encourages young men to give one year to subjects selected from the professional school programmes, although they have no purpose of entering any profession. The second rule offers an inducement to the Law student, who is a Bachelor of Arts, to remain three years in the School rather than two, and to a Medical student who is a Bachelor of Arts to remain four years rather than three, and to all professional students, who have already taken the degree of Bachelor of Arts, to distinguish themselves at their examinations. The degree will thus be placed within the reach of a considerable proportion of the graduates of the University; yet the conditions upon which it is to be obtained are such as must command respect and furnish proper security against too ready bestowal. The degree will continue to be, — what it has been at this University since 1872, — good evidence that the recipient has made serious attainments in addition to those for which he received the Bachelor's degree in arts.

The College Faculty is the body in which almost all the considerable changes, made during the past sixteen years in the educational methods of Harvard College and of the schools which regularly feed it, have been first studied in detail, and then wrought into practical shape; and it is at present engaged, not for the first time, in the discussion of the gravest question of University policy which has arisen, or is likely to arise, in this generation, — namely, the extent to which option among the different subjects should be allowed in the examination for admission to College. Changes in the constitution of a body which exercises such functions are interesting for two reasons, — first, because they indicate in a general way the directions in which the College instruction has been developed, and secondly because they may affect far-reaching decisions upon questions of educational policy. The following table exhibits the constitution of the College Faculty on September 8, 1869, the last day of the summer vacation, three months and a half after the beginning of the present administration. It is to be observed that then, as now, several teachers, who gave instruction to undergraduates in important departments, were not members of the Faculty. In natural history, Professors Agassiz, Gray, and Wyman were regular teachers; in Italian and Spanish Instructor Nash, in music Instructor Paine, in philosophy Instructor Newell, and in mathematics Instructor Leverett gave stated instruction; but none of these gentlemen were members of the Faculty, and the departments of natural history and music had no representative in that body.

COLLEGE FACULTY. SEPTEMBER 8, 1869.

Greek	Professors	2	
	Tutor	1	3
Latin	Professor	1	
	Tutors	2	3
Mathematics	Professors	2	
	Tutor	1	3
Philosophy and Ethics	Professors		2
History	Professors	2	
	Tutor	½	2½

English	Professor	1	
	Tutor (elocution)	1	2
Modern Languages and Literature (not English)	Professor	1	
	Assistant Professor	1	
	Tutors	1½	3½
Physics	Professor	1	
	Tutor	1½	2½
Chemistry	Professor	1	
	Tutor	½	1½
			23

The next table exhibits the constitution of the Faculty fourteen years later, just before the beginning of the current academic year. Eight Instructors, who bear an important part in the departments of modern languages (2), English (2), physics (1), political economy (1), history (1), and mathematics (1) respectively, are not included in the table, because they hold annual appointments, and consequently do not belong to the Faculty.

COLLEGE FACULTY. SEPTEMBER 26, 1883.

Greek	Professors	2	
	Assistant Professors	2	
	Tutor	1	5
Latin	Professors	3	
	Assistant Professor	1	
	Tutor	1	5
Classical Philology	Professor		1
Hebrew, Assyrian, and Arabic	Professors		2
Sanskrit	Professor		1
Mathematics	Professors	3	
	Assistant Professor	1	
	Instructor	1	5
Philosophy and Ethics	Professors	2	
	Assistant Professor	1	3
History and Roman Law	Professors	3	
	Assistant Professors	2	5
History of Art	Professor	1	
	Instructor	1	2

Music	Professor		1
Political Economy	Professor	1	
	Assistant Professor	1	2
English	Professors	2	
	Instructors	2	4
Modern Languages and Literature (not English)	Professors	2	
	Assistant Professors	2	
	Instructor	1	
	Tutor	1	6
Physics	Professors	3	
	Instructor	1	4
Chemistry	Professors	2	
	Assistant Professor	1	3
Natural History	Professors	4	
	Assistant Professors	2	
	Instructor	1	7
Physical Training	Assistant Professor		1
			57

The following statement of the number of teachers in the Faculties of 1869 and 1883 respectively, compared by departments, brings out some interesting facts; but it must be remembered that of twenty-two teachers in the Faculty of 1869, eight were tutors, while in the much larger Faculty of 1883, only ten were of a rank below that of assistant-professor.

Department.	Number of teachers.	
	1869.	1883.
Greek, Latin, and Sanscrit	6	12
Semitic	0	2
English	2	4
Modern languages	3½	6
Philosophy, ethics, and political science	2	5
History, Roman Law, and history of art	2½	7
Music	0	1
Mathematics	3	5
Physics and chemistry	3	7
Natural history	0	7
Physical training	0	1
	22	57

The new subjects represented in the Faculty of 1883 are Sanscrit, Semitic languages, Roman Law, history of art, music, natural history, and physical training, the first four of which are closely connected with the classical languages and literatures. The representatives of the new subjects being deducted, it appears that each department has about doubled its number of teachers during the fourteen years, the development being, on the whole, remarkably symmetrical. The department of natural history has made a greater relative gain than any other, partly because the professors in that department were not members of the old Faculty, and partly because the importance of the department as regards endowment, equipment, and quantity of instruction offered has greatly increased.

The June admission examinations conducted simultaneously at Andover, Exeter, New York, Philadelphia, Cincinnati, Chicago, St. Louis, and San Francisco, answer a good purpose, and cost but little. The expenses attending them in June last amounted to $982.01, and the receipts from fees amounted to $635. The number of candidates examined at these places was eighty-six for the final examination and eighty-seven for the preliminary, distributed as follows: —

	Andover.	Exeter.	N. York.	Phila.	Cincinn.	Chicago.	St. Louis.	San Fran.
Final examination . . .	5	31	21	10	7	4	3	5
Preliminary examination .	9	22	28	9	5	5	2	7

This method of carrying the examination-papers to the candidates, instead of obliging all candidates to travel to Cambridge, only dates from 1876, when examinations were first conducted at Cincinnati; having proved practicable and serviceable, it has been gradually extended, and bids fair to become the normal method for large academies, and for cities which possess schools capable of preparing boys for this University.

For several years past a considerable number of candidates for admission have been examined, who, when admitted, did not become students in the University. This number has been year by year increasing until last summer it reached fifty-six, of whom not more than half have any intention of entering the University at a future time (see the Dean's report, p. 54). Twenty-two of the fifty-six have already connected themselves with other institutions. In giving these persons a thorough examination the College renders a gratuitous service, partly to them, and partly to the schools from which they come; and it will continue freely to render this service until the labor which these examinations impose upon it becomes unreasonably heavy. If there prove to be an increasing demand for this service — as is not unlikely — it may ultimately become expedient to charge a fee for the admission examination at Cambridge as well as at the other places of examination. It is obviously convenient that all the boys in the first and second classes of a well-organized school should aim at passing the Harvard examinations, although some of them may not be going to Harvard College, and some are not going to college at all. Again, every ambitious pupil in the graduating class of a school or academy desires, for his own credit, to pass all the examinations which his comrades are passing, lest some one should imagine him to be less capable or less faithful than his fellows; and the more reputable the examinations the stronger will be this desire. The College recognizes the force of these motives, and has thus far made no objection to examining for admission persons who have no definite intention of entering the University.

In the following table a comparison is instituted upon certain points between six good and large schools which habitually send boys to Harvard College, two of the number being endowed schools, two public schools, and two private schools. The statistics cover a period of eight years for the private schools, and of ten years for the others.

	Percentage of candidates who entered without conditions.	Percentage of candidates who entered with not more than two conditions.	Percentage of boys who graduated at College in the first half of their respective classes.
1.	55.	81.1	54.1
2.	50.5	75.1	58.
3.	44.2	73.8	39.2
4.	42.1	61.4	32.6
5.	35.3	59.	50.5
6.	32 9	57.6	57.2

These schools, all of which are deservedly held in high estimation, differ very much in the results they attain at the admission examinations, but even more in regard to the College standing of their graduates. The boys from three of these schools stand at the end of the College course decidedly above the average in their respective classes, from two of them much below the average, and the boys from the sixth school have just the average standing, half of them being in the first half of their respective classes. The facts prove that there is not so sure a connection between good work as a schoolboy and good work as a college student as there ought to be, many of the ill-prepared boys surpassing during college life many of the well-prepared. In the freedom of college life differences between individuals in respect to ambition, strength of will, physical and mental alertness, and habits created by luxury on the one hand or poverty on the other, produce much greater effect than they do among boys who are under constant observation and pressure at school.

Intercollegiate contests in athletic sports demand further regulation by agreement between the colleges whose students take part in them. They are degrading both to players and spectators if conducted with brutality, or in a tricky or jockeying spirit; and they become absurd if some of the competitors employ trainers, and play with professional players, while others do not. The opinion of the authorities of Harvard College upon this subject is perfectly distinct; they are in favor of forbidding college clubs and crews to employ trainers, to play or row with "professionals," or to compete with clubs or crews who adopt either of these practices. They are opposed to all money-making at intercollegiate contests, and to the acceptance of money or gratuitous service from railroads or hotels, and therefore to all exhibitions or contests which are deliberately planned so as to attract a multitude and thereby increase the gate-money. In short, they believe that college sports should be conducted as the amusement of amateurs, and not as the business of professional players. The distinction between amateur and professional players is one easily made and easily maintained, as the experience of the numerous amateur athletic associations in this country and in Europe abundantly proves. The opposite view is that all games should be played to win, and that whatever promotes winning should be done, — that the best trainers should be employed, and the most expert professional clubs be hired to play with college clubs, and to meet these expenses that the largest amount of gate-money and the largest subsidies from railroads and hotels should be sought for in a business-like way. Between these opposing views there seems to be no tenable middle ground; whoever tries to occupy an intermediate position soon finds himself pushed to one extreme or the other. It should be observed that the evils and excesses which now need to be checked have grown up in connection with intercollegiate athletic contests, — contests which attract undue public attention, but in which only a few persons from each college actually participate, — and that they have no tendency to weaken the force of the arguments in favor of promoting physical exercise and manly sports among college students.

In general, the department of hygiene and physical training is in good condition; the Hemenway Gymnasium is more used, and more intelligently used every year; and during the spring and fall the river and the ball-fields invigorate and refresh hundreds of young men who will greatly need in their after lives all the strength and soundness here acquired or preserved. As evidence of the increasing resort to the Gymnasium it may be mentioned that the number of lockers originally deemed sufficient was 474, and that lockers to the number of 357 have since been added to the original provision. Many lockers are used by two students in common. The site of the new Physical Laboratory having encroached upon the former foot-ball ground, the Corporation, by a grant of $1,000, helped the Athletic Association to grade the northerly portion of Holmes Field, and to prepare there a new ground for ball games and a new running track. The Association procured the rest of the money needed for these purposes. Two additional provisions for physical exercise and recreation are still needed at Cambridge, namely, a swimming-bath, and enclosed tennis courts.

It appears from the Dean's report that the programme of elective studies prepared by the College Faculty in the spring of 1883 for the year 1883–84 offers a larger amount (373 exercises per week) and greater variety of instruction than ever before (p. 76). The most considerable gain was in the important department of Political Science. Professor Dunbar having retired from the laborious office of Dean, and having returned refreshed from a year's vacation in Europe, was able to add one course and one half course to his previous work; and through the generosity of Henry Lee, Esq., of Boston (see Treasurer's Statement, p. 11) the Corporation was enabled to appoint an assistant professor in the department. The results are that fourteen and a half hours of instruction in political science are now given each week against seven hours per week in each of the two preceding years, and that the resort of students to the department has greatly increased. The range of choice of studies now offered to the Harvard undergraduate may be inferred from the fact that no undergraduate is expected to attend during the last three years of his college course more than one tenth of the elective instruction which the College provides, the requirement for the degree being twelve exercises a week, and the amount of instruction given being three hundred and seventy-three exercises a week. The Dean calls attention (p. 72) to the advantages freely offered to students and other residents of Cambridge in the large number of public lectures and readings given at the University each year by scholars eminent in their respective departments. In 1882–83 the number of such lectures was one hundred and twelve, and the number of readings forty-three.

In pursuance of the general policy of the Divinity School to put fairly before its students, so far as its resources permit, the various theological opinions which prevail in the different Protestant denominations, Professor George T. Ladd, D. D., of Yale College, was invited to give a course of eight lectures before the School in the spring of 1883 on the doctrine of inspiration; and the course was given by this eminent teacher and author with great acceptance in the month of April. At about the same time Rev. J. Henry Thayer, D.D., lately a professor in the Andover Theological Seminary, was appointed Lecturer on Biblical Theology for the ensuing academic year, and he is now delivering a course of weekly lectures on the doctrines of sin and redemption, as taught in the New Testament.

The number of students continues to be small, but their quality has greatly improved under the stringent regulations adopted during the past few years, and now leaves little to be desired. They come from several denominations, bringing hither a good preliminary training, and manifesting while here an ardent desire for sound scholarship, and a sincere enthusiasm for truth, religion, and their humane calling. The ample scholarships which are at the disposal of the Faculty are awarded for merit and need without any reference to the opinions of the applicants, and it has happened of late that students of evangelical opinions have carried off a large share of the best scholarships.

The Dean of the School describes in his report (p. 86) the limited option among the subjects taught by the members of the Divinity Faculty which it was last year decided to permit to candidates for the degree of Bachelor of Divinity. It seems probable that the liberty of choice thus introduced will gradually be widened, and perhaps be extended to appropriate subjects taught by professors in other departments of the University. Under the existing regulations with regard to admission, candidates for the degree of Bachelor of Divinity are likely to be already Bachelors of Arts. They will therefore be presumably eligible for the degree of Master of Arts or of Doctor of Philosophy; and if the conditions under which these degrees may be sought are more attractive than the conditions under which the degree of Bachelor of Divinity must be sought, they will prefer to become candidates for the degree in arts or philosophy rather than for the degree in divinity. The degree of Bachelor of Divinity gets little artificial protection; for churches cannot be relied on to demand it of all young candidates for settlement.

Divinity Hall has been made, by judicious repairs and improvements during the past two years, a pleasant and convenient building. The grounds about it are now kept in good order, and the extension of the University northward has made it seem less isolated than formerly. Accordingly the chambers in the Hall are in demand, and for the first time in many years they are all let. The reference library of the School occupies several chambers on the lower story. A separate fire-proof building is needed for the proper storing of this valuable collection; and the same building might well contain a small reading-room, and a museum into which should gradually be gathered maps, models, and photographs to illustrate Biblical studies, casts of cuneiform inscriptions, and other objects of philological or archaeological interest.

The year 1882-83 was not a prosperous one in the Law School. The number of students was not so large by twenty as in the previous year; Professor Thayer was in Europe on vacation, and his place was temporarily filled by three younger instructors; Professor O. W. Holmes, Jr., who had been appointed in January, 1882, and had begun to teach at the opening of the School in October, resigned his chair in December, and it became necessary to divide the work which he had assumed among the other three professors; and finally in spite of watchful economy the expenses of the year exceeded the receipts by $1,674.46. After much discussion in the Faculty and the governing boards the vacancy in the Faculty created by the resignation of Professor Holmes was filled in June last by the election of William A. Keener, Esq., of New York, to an assistant professorship. Mr. Keener graduated at the Law School in 1878, and had been for five years in practice in the city of New York. From the first, however, he preferred the life of a student and teacher, had embraced all opportunities to teach law, and had given decided promise of success as a teacher. The appointment was of a kind less common in the law schools of the United States than in those of Europe; but its results have already proved satisfactory.

At the close of the summer vacation the very handsome and commodious building which the school owes to the munificence of Edward Austin, Esq., of Boston, was ready for occupancy, although not quite finished on the outside. The law library was moved thither in the last weeks of September, and lectures began there on the first of October. It would be hard to exaggerate the advantages which the School derives from the possession of this admirable building. The reading-room, which is the chief resort of the students, is a noble room, light, airy, and handsomely furnished; the book-room is fire-proof, well-lighted, and capacious enough to hold the present library and the probable accessions of fifty years; the lecture rooms are well ventilated; the rooms for the Dean and Librarian are ample; and the locker-rooms and other provisions for the convenience and comfort of the students are sufficient for present needs and capable of extension. Internally and externally Austin Hall is very substantially constructed; and it is by far the most ornate building which the University possesses. The architect was Mr. H. H. Richardson, to whom the University owes the design of another much admired building, Sever Hall; and the committee of the Corporation in charge of the undertaking was the Treasurer, Mr. Hooper, to whose good judgment and care in supervising the work the School is much indebted.

The new book-fund ($32,021.25), to which many members of the profession handsomely contributed, is a very useful addition to the resources of the School.

The current year opened favorably with the full staff of five resident teachers, and an increase of fourteen in the number of students; but it is very evident that, with its present scale of expenditure, the School needs an additional endowment of at least $100,000, the income of which should be applicable to salaries.

The completion of its new building was the event of principal interest to the Medical School in 1882–83. The cost of the building, with all its fittings and furniture, is (31 December, 1883) $237,465.38, to which must be added $83,950.24 (April, 1880) as the cost of the land, including expenses incidental to the purchase, making a total of $321,415.62. The lot of land is large enough for two buildings of the size of the present structure, and the new building would accommodate a school twice as large as the present School; so that a prudent provision has been made for the growth which may reasonably be anticipated. Great pains have been taken to adapt the building, not only in its main features, but in every detail, to its destined uses. A committee of the Medical Faculty supervised the preparation of the plans, and watched over their execution; the architect of the building, Mr. Henry Van Brunt, elaborated with much patience and care, under the guidance of the professors most nearly concerned, the complicated and numerous flues and drains, the water, steam, and gas pipes, and the counters, sinks, and cabinets, which were required in the numerous laboratories, and the peculiar fittings and furniture of the lecture-rooms and preparation-rooms. As the work advanced, the committee of the Faculty held frequent stated meetings at the building, and from the beginning gave their time and labor without stint. The result is a spacious and convenient fire-proof building which is thoroughly adapted in all respects to the needs of the teachers and students who are to use it.

In May last a fire broke out late in the evening in the floor of the principal lecture-room on the second story. The floor was of wood, and rose in steps, upon which had been built high-backed wooden benches. The fire was soon intensely hot, and there was delay in getting water, so that everything in the room which could burn was completely destroyed, and much superficial damage was done all over the building by the heat and smoke; but the fire did not get beyond the room in which it originated, the solid wooden floor of the lecture-room over the room in which the fire occurred being perfectly protected by its tight envelope of plaster on wire lathing.

The building was begun in June, 1881, and its construction took six months longer than was expected. So many additions and improvements were made during the progress of the work that the building cost, with its furniture, $30,000 more than it was expected to cost at the start. Nevertheless the savings made by the School since 1875 ($70,875.13) will be drawn upon to only a moderate extent in paying for furniture and fittings. The land and building are the fruit of two public subscriptions, — the first made in 1874–75, and the second in 1881, — with the interest which accumulated thereon. Both these subscriptions were raised with noticeable ease. It seemed as if the community were all ready to give, — as if medical education were recognized at last as a peculiarly interesting and promising object for endowment, — interesting, because of the universal pressure of the evils with which medicine contends, and promising, because the astonishing achievements of medical science and skill within the past forty years give such earnest of further relief for mankind from pain, disease, and misery. Now that an adequate building has been provided, it is desirable that the attention of persons who wish to improve medical education, or promote medical research, should be directed to professorship funds, scholarship funds, and funds for maintaining laboratories devoted to instruction and investigation. The needs in these directions are many and urgent; for example, the University has no professorship of public health, or preventive medicine, — a modern subject of great importance which can be properly dealt with only through an endowed professorship, because the professor, if properly devoted to his subject, would be cut off from private practice. It would be a great service to humanity to divert even a tithe of the money annually given to charities of pauperizing tendency towards the promotion of medical teaching and research.

The Medical School has been painfully reminded during the past two years, by resignations, sickness, and death among its senior professors, that the only way to keep its Faculty strong is to admit young men of promise freely to subordinate positions in which merit and power can be exhibited, and then to advance the most successful teachers among them as rapidly as possible to places of responsibility. The vacancy created by the resignation of Dr. Holmes in November was filled in June by the election of Dr. Thomas Dwight to the professorship of anatomy, after careful inquiry had been made both in Europe and the United States for available candidates among anatomists of reputation. When Dr. Ellis resigned the office of Dean, Dr. Fitz also retired from the office of Secretary of the Faculty, the duties of which he had discharged with great diligence and efficiency for ten years. At the end of June, Dr. Henry P. Bowditch was chosen Dean by the Corporation and Overseers, and Dr. William F. Whitney was subsequently appointed Secretary by the Corporation. The administration of the School thus passed into the hands of younger men whose relation to medical teaching and the medical profession is somewhat different from that of their predecessors, because neither of them is a practising physician, but from whom there is every reason to expect an equal devotion and an equal success in the conduct of the School.

The Dental School has made in three years a substantial gain in the number of its students.

	1880-81.	1881-82.	1882-83.	1883-84.
Number of students,	18	21	25	30

The past year was one of some embarrassments, because of the vacancy in the professorship of operative dentistry, and of the interruption of work in the Dental Infirmary caused by the rebuilding of the out-patients department of the Massachusetts General Hospital; but on the whole the work of the year was successful, the income of the School increased, its debt was diminished, and the payment of small salaries to its professors was resumed after an interval of five years. In January last, Dr. Thomas Fillebrown, of Portland, a member of the first class which graduated at the Dental School (1869), was chosen Professor of Operative Dentistry, and in May following Dr. Charles A. Brackett, of Newport, Assistant Professor of Dental Therapeutics, was promoted to the long-vacant chair of Dental Pathology and Therapeutics. The School therefore entered upon the current year with a complete and strong Faculty.

There is no department of the University which has a heartier support from its own graduates than the Dental School. They know its struggles, needs, aims, and deserts, and they give every possible assurance of their belief in its present and future usefulness. The School has also a European reputation, attracting more students from abroad than any other department of the University. Nevertheless, after fifteen years of existence, it has no property whatever, except a few chairs and implements, and a fund of $955.00 (Aug. 31, 1883), which has been chiefly contributed by its own young graduates. Were it not for the continued hospitality and assistance of the Medical School, it could not be maintained.

The Faculty of the School of Veterinary Medicine was organized during the year 1882–83, and the first annual report of its Secretary will be found below (p. 106). An excellent hospital situated on Village Street, Boston, was built and equipped during the spring and summer, and was occupied before the close of the academic year, thanks to the energy and good judgment of Professor ınd to the generous and judicious assistance of ̣stees of the Massachusetts Society for Promoting ure, of Dr. William F. Whitney, and of Mr. Henry inson. By arrangement with the Medical School Bussey Institution, the Veterinary School was permanent guest of these two departments, and ents were made welcome to their lecture-rooms r classes. At the beginning of the current year andidates offered themselves for admission to the of whom nine were accepted.

perations of the Department are necessarily con- the time being almost entirely to the treatment g patients; but it is the desire of the surgeons to a free clinique on an adequate scale as soon as So strong is now the affectionate and compas- feeling of many persons towards domestic ani- important are the questions of public health with eterinary science deals, and so vast are the pecu- terests of the community in horses, neat cattle, er live-stock, that this new department of the ty finds many cordial friends, and will ask, at the ime, for suitable endowment with fair chance of g what it needs.

ction was given as usual at the Bussey Institution 1882–83, except that Professor Lyman gave, for r only, the course heretofore given by Professor The Corporation adopted in May last a new mea- regard to the carrying on of the Bussey Farm. e trust requires that the Farm be kept in good n, it has been the practice of the Corporation to standing grass and apply the proceeds to the pur- manure. They have now appointed Mr. D. T. , a graduate of the Institution, superintendent of n, expecting him to get the best possible crop from the estate, and to take horses and other animals to board in the large barns on South Street, which have been standing empty for many years. The establishment of the Veterinary School and Hospital was the occasion of this change of plan with regard to the Bussey Farm; for it was obvious that the Veterinary Department could use the commodious buildings and yards at the Farm for convalescents and chronic cases with great advantage, and, on the other hand, that boarders coming from the Hospital would help consume the hay on the Farm. The expectations with which the change was made have thus far been fairly fulfilled; but several years will be required to develop the full effects of the new policy.

For several years past the average annual expenditure in the Library, apart from money paid for books, has been $20,000, — a large sum which is taken from the College tuition-fees. Yet this heavy expenditure has not availed to keep the cataloguing abreast of the accessions of books and pamphlets, beside meeting the cost of service and administration. The report of the Librarian for 1882–83 states (p. 113) that 6,000 uncatalogued titles from the accessions of recent years have already accumulated. Persons who are not familiar with the administration of the Library are apt to attribute far too large a part of the annual expenditure to the cataloguing department, and therefore to complain that the cost of ordering a book, and getting it placed in due course upon the Library shelves ready for use, bears too large a proportion to the cost of the book itself. But less than half of the total expenditure in the Library, excluding the purchase of books, is connected in any way with the cataloguing of books and pamphlets. From the total of $20,000 the following items must be deducted as regular expenses incident to carrying on the establishment: —

Salary of the Librarian	$4,000.00
Bulletin and other printing	1,250.00
Binding (the portion done in this country)	1,250.00
Fuel, cleaning, stationery, postage, repairs, &c.	2,500.00
Wages paid for service of books and attendance	2,000.00
Total	$11,000.00

There remain $9,000 with which to meet the cost of ordering $15,000 worth of new books each year, receiving and collating the books thus bought and all books given to the Library, keeping the money accounts, cataloguing all accessions, and placing them on shelves in their proper classes. When it is remembered that two or three persons possessing extensive scholarship and good judgment must be employed in this part of the Library work, and that all the labor must be skilled labor, $9,000 will appear a moderate expenditure for the purposes above described. At the present rate of expenditure all hope must be abandoned of making any progress in recataloguing the thousands of books, received before 1860, which have never been entered upon the short-card catalogue then begun.

It is very desirable that a plan should be made for finishing the catalogue which was begun in 1860 in a given number of years, by adding to the annual expenditure for cataloguing, and gradually increasing the force employed, until it can catalogue all accessions and a predetermined number of old titles each year; and then that this plan, once adopted, should be firmly adhered to until it is executed. Changes in the staff employed in cataloguing, and particularly alternate enlargements and reductions of the force employed, are very wasteful; for practice and an intimate acquaintance with the catalogue are essential to efficiency in the work. There is some hope that such a plan may be entered upon during the current year.

The Librarian states convincingly the objections to such benefactions as those of the late Joseph J. Cooke of Providence, who gave $5,000 to each of ten libraries, provided that they should spend the money in buying books at the auction sale of his library after his death. The Library succeeded in obtaining at the sale books to the amount of $5,000 at prices not very much above their market value; but the method creates an artificial competition which hurts the sale for other buyers, and impairs in the beneficiaries the sense of obligation to their benefactor.

A report upon the Herbarium by the Director, Professor Asa Gray, is included for the first time in this Report (p. 114). The Herbarium is one of the most interesting and valuable of the scientific collections belonging to the University. It is one of the permanent fruits of Professor Gray's long and diligent life as a systematic botanist, and of his recognized position as the highest authority in the world upon the flora of North America. The strongest impression received on reading this first annual report is, that two such learned men as Dr. Gray and Dr. Watson ought not to be giving their precious time to the examination of the multifarious collections which are incessantly poured in upon them, and to the selection and preparation of such specimens as the Herbarium lacks, — particularly when unfinished works of great importance, which no one else can execute so well, are waiting for completion at their hands. This first impression will be somewhat modified by the subsequent reflection that some part of the work thus done for the Herbarium, and for the collectors and contributors who constantly enrich it, is work which demands the most comprehensive knowledge and the largest experience; but the conviction will remain, that the Director and Curator ought to be furnished with as much skilled assistance as they can possibly employ for the less difficult parts of their work, to the end that their own time may be devoted, as far as possible, to investigation and authorship. It will be seen in the report of the Director that the Trustees of the Massachusetts Society for Promoting Agriculture, who contributed effectively to the establishment of the professorship of natural history in 1805, and of the Botanic Garden in 1807, still give their intelligent and liberal support to the botanical department.

The report of the Director of the Botanic Garden (p. 116) shows a prudent and economical administration directed mainly to the repair of damages caused by drought and decay, to the increase of the Museum, to the systematic arrangement and exhibition of those living plants which are of interest to students of systematic and economic botany, and of vegetable morphology and physiology, and to the promotion of botanical investigations.

On the 30th of December, 1882, an important indenture was executed between the Board of Park Commissioners of the City of Boston and the President and Fellows of Harvard College (see Appendix I.) concerning the use of the Arnold Arboretum as a public park. Under this contract the City acquires gratuitously for the purposes of a public park about one hundred and twenty acres of land, beautifully diversified, and in part handsomely wooded, upon which the University is to maintain a collection of all the trees and plants which will live in the open air at West Roxbury. The University, on the other hand, gains security in the uninterrupted execution of the Bussey and Arnold trusts on the tract taken by the commissioners, permanent exemption from taxation on this tract, the construction by the City of roads enough to give suitable access to the whole Arboretum, the maintenance of a police sufficient to protect the collections and plantations, and security against the laying out of streets or railways through or over any part of the Arboretum without the consent of the President and Fellows. It is believed that this contract will prove very advantageous both to the City and the University. The management of the Arboretum as a scientific establishment, and as a collection of living trees, shrubs, and herbaceous plants, remains in the hands of the President and Fellows, and the admission of the public at reasonable hours and under proper regulations will only add to its usefulness as a means of instruction. The City began to build the roads through the Arboretum last July. The Director of the Arboretum reports (p. 137) that the large collections of plants which have accumulated during the past ten years are in a flourishing condition.

The report of the Director of the Chemical Laboratory directs attention to the large number of students who worked in the department (208), to the continued productiveness of the Laboratory in chemical researches, to the usefulness of the summer courses carried on by Dr. Mabery, and to the increase of the mineralogical collection. At the end of the year the Laboratory lost its two principal assistants, — Dr. Charles F. Mabery being appointed to a professorship in the Case School of Applied Science at Cleveland, and Dr. Leonard P. Kinnicutt to a professorship in the Worcester Free Institute. The simultaneous withdrawal of these two gentlemen was a serious loss; but, on the other hand, such promotion of its assistants is serviceable and honorable to the Laboratory in which they were trained.

The work of the Observatory in 1882–83 is fully set forth in a very interesting way in the annexed report of the Director (p. 122). It is obvious that all the resources of the establishment in instruments and money were intelligently and economically employed, and that its influence, usefulness, and reputation are increasing from year to year. The effort to replace the annual subscription of $5,000, which expired in 1883, by the income of a permanent fund of $100,000 was only partially successful. — a fund of $50,000 being the result of the persistent exertions of the Visiting Committee of the Observatory.

It will therefore soon be necessary to reduce the annual expenditures by about $2,200, unless further contributions to the permanent endowment are received.

Whoever desires to understand the development of instruction in zoölogy and geology at the University since 1873, and the progressive increase of interest in biological and geographical studies among the students, should read the concise report for 1882–83 of the Curator of the Museum of Comparative Zoölogy (p. 139), in which he describes the growth of the establishment during the past ten years. It appears from this report that $900,000, in addition to the current expenditures, have been devoted to the Museum since 1873, of which sum $500,000 have been used for building and for the purchase of collections, and $400,000, including the Sturgis-Hooper fund, have gone to increase the permanent endowment. The $500,000, which have been spent outright for building and for collections, have not been wastefully or carelessly expended; on the contrary the building is severely plain, its furniture and cases are constructed for service only without regard to appearance, and every purchase of a collection has been made with deliberation and under circumstances favorable to the purchaser. At the end of the year 1882–83 three laboratories for students in biology, three for students in geology and palaeontology, two private laboratories for instructors, and one large lecture-room, were completed at the Museum, and are now occupied by the instructors and students in these departments. Such a munificent provision of the means for instruction in natural history has, of course, brought about a decided increase in the amount of biological and geological instruction, both elementary and advanced, offered by the University, and in the number of graduate and undergraduate students who elect natural history courses. Since no other department of instruction has received such re-enforcement within the same period, or any furtherance at all resembling the support given to natural history by the development of the Museum, the relative weight or influence of the department of natural history in all University affairs has inevitably and properly increased. The arrangement of the exhibition-rooms advances steadily, and the productiveness of the Museum as a place of of biological research is fully maintained.

The average weekly membership of the Dining-Hall Association ranged in 1882–83 from 619 in the first third of the year to 487 in the last third, the average membership for the whole year being 546. In the preceding year the Directors had difficulty in keeping members enough in the Association to carry on the Hall; but in 1882–83 the number of members was satisfactory throughout the year. Nevertheless, upon evidence that dissatisfaction existed in the Board of Directors, Mr. Balch, who had been Steward since January, 1876, sent in his resignation, which was accepted by the Corporation at the end of the year. Late in the summer Mr. J. J. Sullivan was appointed Steward, and the Association began the current year with a large membership and every evidence of prosperity. In nine years the Hall has had two Stewards, of whom the first served two years and four months, and the second six years and eight months. The following table exhibits the fluctuations in the price of board at the Hall during the nine years of the existence of the Association: —

	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.
First half-year	4.60									
Second half-year	4.35									
First third of year		4.50	4.80	4.10	4.00	4.10	4.40	5.00	4.46	4.16
Second " "		4.80	4.50	4.00	4.00	4.10	4.40	5.00	4.58	
Third " "		5.00	4.15	4.00	4.20	4.24	4.60	4.54	4.40	
Average price of year	4.42½	4.76⅔	4.48⅓	4.03⅓	4.06⅔	4.11⅓	4.46⅔	4.84⅔	4.48	

The Dining-Hall Association may now be considered one of the established institutions of the University; for its organization and methods have been tested by time. It is of great service in several ways; — first, by providing a substantial diet at a low price for students who wish to live inexpensively; secondly, by keeping down the price of board at other places in Cambridge; thirdly, by facilitating the formation of new acquaintances; and fourthly, by exerting a strong influence, through its democratic constitution, against all provincialism.

The President and Fellows have observed with great satisfaction the beginning of what they trust will prove a flow of unrestricted bequests, — in 1879–80 the modest bequest of Rev. Daniel Austin of Kittery, in 1880–81 that of John C. Gray of Boston, in 1882–83 the very considerable bequest of George B. Dorr of Boston, and recently that of Henry T. Morgan of New York. The reiterated statement of the many objections to minute restrictions upon the use of endowments intended to be permanent has apparently taken effect upon the public mind. But lest reluctance to restrict the application of an intended benefaction should sometime cause the diversion of bounty to other channels, it may be well to point out that there are many restrictions which are not practically inconvenient. Thus the designation of a comprehensive object like salaries, scholarships, maintenance of laboratories, or administration and service in the Gymnasium, Chapel, Library, or Dining Hall, has never been found inconvenient. Again the selection of some one department of the University, — such as the Observatory, the Law School, or the Veterinary School, — for the general benefit of which the giver desires his gift to be used, cannot give rise to any embarrassments. Neither are specific interdictions objectionable, if not too broad. Thus the Museum of Zoölogy has no difficulty in conforming to the direction that no part of the income of the Gray Fund shall be used for repairs of real estate; and John B. Barringer's order that no part of the income of his fund shall be used for prizes does not make his benefaction less useful or less welcome. The designation of a preferred application, failing which the application is to be at the discretion of the President and Fellows, can give trouble only when the preferred application is eccentric or difficult of discovery. In short, while unrestricted gifts must be for many years to come peculiarly welcome to the President and Fellows, there are many natural wishes, preferences, predilections and even prejudices of benefactors which may find expression in their gifts without impairing the value of those gifts to the University.

Among the gifts of the year which are acknowledged in the Treasurer's Statement (p. 9) is a fund of about $60,000, raised by subscription, the income of which is to be applied to the increase of the President's salary. The President and Fellows gratefully accept this generous gift, believing that increase of salary will add to the dignity and attractiveness of an office which has already great privileges, if also serious perplexities and responsibilities.

It is the general purpose of the Corporation to spend every year all their income. They believe that well-instructed young men are the best investment or accumulation which the University can make from year to year for the benefit of future generations. As fast as new resources are placed in their hands, whether from increase in the amount of tuition fees, or from the income of new endowments, the Corporation incur new permanent charges. Experience has shown that new buildings will be provided by gift nearly as fast as they are needed; but that enlargements, improvements, and repairs fall upon the Corporation. Unexpected calls for expensive improvements or repairs are apt to cause deficits, as in the years 1879–80, 1880–81, and 1881–82. The purchase of land in Cambridge also falls chiefly upon the Corporation, and during the past twenty years purchases to a considerable amount have necessarily been made,—whence that undesirable item among the general investments called "unoccupied lands," an item which the Corporation are constantly trying to reduce, and have reduced since 1879 by $32,399.70. The financial policy proper to a University is, of course, entirely different from that of a corporation whose final object is to make money; it should be conservative in regard to the preservation of capital, but free in regard to the prompt and complete expenditure of income. For the future enlargement of their resources the Corporation rely upon the increase in the number of students and the influx of gifts.

The lucid statement of the Treasurer needs no comment, except perhaps the single remark that the increase of the quick capital (p. 3) would appear much larger than it does, were it not for the withdrawal of building funds, temporarily in possession of the Treasurer but spent during the year.

When the act of 1865 gave to the Alumni the power of electing the Overseers, it was imagined that the electors, the larger part of whom would be young men, might choose a youthful and inexperienced board. The actual result has been quite the reverse. Only one of the present Board is under forty, only ten of the thirty elected members are under fifty, and the average age of the elected members is fifty-seven. No member of the Board graduated in arts later than 1866, and on the average the Board may be said to have graduated more than thirty-five years ago, at a time when the University was very unlike the institution of to-day. Such elderly men may be distinguished representatives of the Alumni, and may, perhaps, be in position to enjoy the advantage of advice from sons or grandsons now or recently members of the University; but their personal recollections of College life are less serviceable to them as University legislators than the recollections of much younger men would be.

The usual information concerning the number of students, and the honors, prizes, and degrees given in 1882–83, together with a list of the examining committees appointed for that year by the Board of Overseers, will be found in the Appendix (II.–VI.). The attention of the Overseers is respectfully invited to the following reports from the Deans of the several Faculties, the Secretary of the Academic Council, the Librarian, the Directors of the Herbarium, Botanic Garden, Observatory, Chemical Laboratory, and Arnold Arboretum, and the Curator of the Museum of Comparative Zoölogy.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, Jan. 4, 1884.

REPORTS

OF THE

DEANS OF THE FACULTIES, THE SECRETARY OF THE ACADEMIC COUNCIL, THE LIBRARIAN, THE DIRECTORS OF THE HERBARIUM, BOTANIC GARDEN, OBSERVATORY, CHEMICAL LABORATORY, AND ARBORETUM; AND THE CURATOR OF THE MUSEUM OF COMPARATIVE ZOÖLOGY.

To the President of the University:

Sir, — I have the honor to submit the following report on the administration of the College during the academic year 1882–83.

At the beginning of the year the whole number of students was nine hundred and thirty-one, distributed as follows: —

Seniors	203
Juniors	210
Sophomores	208
Freshmen	264
Whole number of undergraduates	885
Special Students	46
Total	931

Of the Seniors, one died early in the year, and another was obliged to leave on account of ill health. All the rest completed their course, and for the first time in many years no Senior failed to graduate with his class by reason of deficiencies of scholarship. Two former members of the class, whose work completed at the beginning of the year had only entitled them to be classed as Juniors, succeeded in making up their deficiencies and obtained their degrees; and two other Juniors, who had been permitted, for special reasons, to do the work of the last three years of the course in two years, were likewise admitted to the degree. The net result was a graduating class of two hundred and five.

The number of Seniors who graduated at each commencement of the last seven years, with the number of failures in each class due to deficiencies of scholarship, is shown in the following table: —

	1877.	1878.	1879	1880.	1881.	1882.	1883.
Graduated	170	144	189	162	182	177	203
Failed, but can make up . .	17	11	5	6	9	7	..
Failed, and must repeat the year	2	4	..	..	..	..	..

Four of those who failed in 1882, three who failed in 1881, and one who failed in 1876, made up their deficiencies at the examinations of last year; and these eight, together with one member of the class of 1882, who, for persistent neglect of the regulations, had been refused his degree with his own class, were recommended for the degree out of course.

The numbers of the three classes of last year which are still in college, and their aggregate losses and gains, from October, 1882, to October, 1883, are as follows: —

	Present, October, 1882.	Loss.	Gain.	Present, October, 1883.
Class of 1884	(Juniors) 210	12	12	(Seniors) 210
Class of 1885	(Sophomores) 208	25	12	(Juniors) 195
Class of 1886	(Freshmen) 264	32	15	(Sophomores) 247

The nature of the losses and gains of the several classes is shown by the following table: —

LOSSES.	Class of 1884.	Class of 1885.	Class of 1886.	Total for three Classes.
Left College without completing the year	4	13	11	28
Left College after completing the year	4	6	15	25
Removed to a lower class	...	1	3	4
Advanced to a higher class	4	5	3	12
Total loss	12	25	32	69
GAINS.				
From higher classes	...	...	3	
From lower classes	5	3	...	
Newly admitted	7	9	12	
Total gain	12	12	15	39
Net loss	...	13	17	30

Of the twenty-eight persons newly admitted to these three classes, ten were here as Special Students last year. Of these ten, two who came to us a year ago from other colleges have now gained admission to the Senior class; two who were formerly members of other classes in this college have been admitted, one to the Senior, the other to the Junior class; and six, who had never been members of any college class, have satisfied the requirements of the Faculty for admission, one to the Junior and five to the Sophomore class. Of the eighteen newly admitted who were not here last year, six had been in college before and have returned after an interval of absence; three entered the Sophomore class by passing the usual examinations; and nine graduates of other colleges were admitted without examination, or with only partial examination, one to the Sophomore, four to the Junior, and four to the Senior class.

Of the twenty-five students in the three classes who completed the work of the year, but have not returned to college, one was drowned during the summer vacation; the rest withdrew voluntarily to go into business, or to begin professional study, or for other reasons of a personal nature. Twenty students withdrew, for personal reasons, without completing the year's work. Two of these have returned and entered a lower class, and one has returned as a Special Student. Five students were required to leave before the end of the year for persistent neglect of their college duties, but three of them have been permitted to return this year and join a lower class. Three withdrew voluntarily at the end of the year on being informed that their deficiencies of scholarship were such that they could not go on with their classes. The following table gives a comparative view of the losses suffered by all of the classes, in each of the last eight years, owing to deficiencies of scholarship: —

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.
Removed to lower classes . .	28	17	25	14	22	18	14	7
Withdrawn during the year .	8	16	4	11	4	7	3	5
Total	36	33	29	25	26	25	17	12
Whole number of undergraduates	776	823	813	819	813	829	823	885

The numbers of Special Students from October, 1882, to October, 1883, were as follows: —

Registered October, 1882		46
Registered later in the year		2
		48
Withdrew during the year		6
Completed the year		42
Left college at the end of the year	20	30
Admitted to a college class	10	
Returned as Special Students, October, 1883		12
Admitted, October, 1883		54
Present number		66

As the regulations described in my last Report, by which the Faculty gave Special Students a well-defined position in the College, and subjected them to more careful supervision, went into effect at the beginning of the year 1882–83, it may be well to present with some fulness the results of the system during the first year of its operation; and as the number of students was small, this can be done within sufficiently brief compass. The following tables exhibit the amount and quality of the work done by each of the forty-two Special Students who completed the year. Forty of these passed all the examinations in at least one study; two omitted either the mid-year or the final examinations in all of their studies.

The numbers in the first column stand for individual students arranged according to the amount of work they accomplished. The first table exhibits the record of those whose work consisted wholly or chiefly of elective courses. They were thirty-three in number, and sixteen of them succeeded in passing satisfactorily in all their studies. Of the remaining seventeen, two failed to take all of the required examinations in any of their studies, and fifteen passed in only a part of their work, having either omitted to take some of the examinations, or having taken the examinations and failed, in the rest. The deficiencies due to each of these causes are shown in the tables. The figures indicating the number of courses do not usually show the number of *studies*, but express the amount of the work done as it would be estimated for an undergraduate, the unit being one full elective course. Prescribed studies are estimated on the same basis, a study having three exercises a week being regarded as a full course, and other studies estimated in proportion. For the purpose of comparison it may be stated that a full year's work for a Senior is equivalent to 4.2 courses; for a Junior, to 4.5 courses; for a Sophomore, to 5 courses; for a Freshman, to 5.3 courses.

I. Special Students who passed in all their work.			II. Special Students who did not pass in all their work.					
Students.	Number of courses.	Average per cent.	Students.	Number of courses taken.	Number of courses in which the work was not completed.	Number of courses in which the student failed.	Number of courses in which the student passed.	Average per cent. in courses passed.
1	6.7	85	18	6.3	....	.8	6	49
2	6.3	80	19	5.5	....	1	4.5	47
8	5.5	71	20	4.6	.6	....	4	70
4	5	83	21	4.3	....	1	3.8	47
5	5	55	22	4	1	....	3	77
6	4.5	70	23	5	....	2	3	55
7	4	94	24	4	....	1	3	46
8	4	66	25	4.9	....	2.8	2.6	50
9	4	52	26	4.5	2	....	2.5	77
10	3.5	64	27	3	1	....	2	71
11	3.5	48	28	5.6	1	2.6	2	56
12	8	52	29	3	....	1	2	47
13	3	52	30	2	1	....	1	95
14	2.9	65	31	2	1	....	1	86
15	2	90						
16	2	73	32	3.2	3.2	....	....	....
17	2	61	33	2	2	....	....	....

The next table presents the record of nine Special Students, whose work consisted exclusively of prescribed studies: —

Students.	Number of courses taken	Number of courses in which the work was not completed.	Number of courses in which the student failed.	Number of courses in which the student passed.	Average per cent in the courses passed.
1	5.8	...	...	5.3	68
2	6.3	1	...	5.3	50
3	5.3	...	1.6	3.7	65
4	5.8	...	2.2	3.1	50
5	5.3	...	2.3	8	56
6	3	...	.3	2.7	50
7	2.6	...	.2	2.4	73
8	5.3	1.5	2.6	1.2	61
9	3.9	2.9	.7	.8	40

A Special Student may obtain a certificate of proficiency in any study in which his mark for the year is not less than seventy-five per cent. This standard was attained last year, —

In studies amounting to less than one full course, by 4 students.
“ “ “ “ 1, but less than 2 courses, by 10 “
“ “ “ “ 2, “ “ “ 3 “ “ 4 “
“ “ “ “ 4, “ “ “ 5 “ “ 3 “
“ “ “ “ 6 courses, “ 1 “

The Faculty further offer a general certificate, with mention on the Commencement programme, to any Special Student who shall have passed in twelve elective courses with an average mark of not less than seventy-five per cent. The student would ordinarily accomplish this by taking four courses a year for three years. The number of Special Students who last year passed in four or more elective courses was twelve, of whom only four attained an average of seventy-five per cent in the courses they completed.

In the examinations for admission the Faculty made a slight change in the requirements in Physics, by displacing Arnott's text-book, and substituting for it Avery's Elements of Natural Philosophy under Prescribed Physics, and under Elective Physics, Balfour Stewart's Elementary Lessons, which requires some knowledge of Trigonometry. The object of this change was not merely to secure a better training in Physics through the use of better text-books, but also to strengthen the elective group in Physical Science, which has proved to be considerably easier for the candidate to prepare than any of the other three groups. The difference has been by no means eliminated by this change, but it is thought that the state of the instruction in Physics in the schools will not justify any greater increase at present.

The Faculty also adopted two measures calculated to lighten the burden of the examination, — first, by permitting a candidate who takes the whole examination in the same year to be examined on a part of the requirements in June, and to postpone the rest (not exceeding six subjects) till September; and secondly, by providing examinations on the work of the Freshman year in June, as well as in September, and permitting a candidate to be examined on any of the subjects at either time. But under neither of these provisions can a candidate be examined again in September on a subject in which he failed in June.

The June examinations were held, as heretofore, at Cambridge, Exeter, N. H., New York, Philadelphia, Cincinnati, Chicago, St. Louis, and San Francisco, and, for the first time, at Andover, Mass., which was added to the list in compliance with the request — made with the approval of their Principal — of the pupils of the Phillips Academy at that place.

The number of candidates examined was three hundred and twenty-six. The results of the examinations in the several subjects, compared with those of previous years, are shown in the following table: —

1878. 133 Candidates. 1879. 179 Candidates. 1880. 236 Candidates. 1881. 253 Candidates. 1882. 315 Candidates. 1883. 326 Candidates.	PRESCRIBED SUBJECTS.										
	Caesar and Virgil.	Latin at Sight and Composition.	Xenophon or Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Plane Geometry.	Physics.	English Composition.	French or German.
Percentage failing in each study.											
1878	14	7.5	29	18	20	13	31.5	43	14	19	36
1879	8	11	20	23	18	14.5	28.5	37	19	28.5	21
1880	14	6	17	17	15	14	29	36	11	17	13
1881	8	6	12	13	15	14	25	27	7	10	18
1882	7	11	7	16	11	12	27	20	14	15	15
1883	10	4	11	17	9	7	32	16	14	14	25

	ELECTIVE SUBJECTS.										
	Cicero and Virgil.		Latin at Sight and Composition.	Herodotus.	Greek Comp.	Iliad.	Trigonometry.	Solid Geometry.	Elective Physics.	Chem. or Botany.
Percentage failing in each study.										
1878	7		15	17.5	36	21	29	65	38	57
1879	16		28	22	33	13	32.5	60	48	24
1880	14		22	12	33	14	39	48	18	9
1881	15		13	12	19	12	30	41	16	27
	Cicero.	Virgil and Ovid.	Comp.							
1882	13	11	29	10	19	9	45	27	17	13
1883	12	6	17	8	20	7	45	12	28	13

The next table presents the general results of the examinations in each of the last four years. The present requirements have been in exclusive use for only three years; but in 1880 their use was so general, — only forty-two candidates were examined on the old method, — that the statistics for that year may properly be included in the comparison.

	1880.	1881.	1882.	1883.
Candidates examined	236	253	315	326
" admitted	216	231	286	298
" " clear . .	82	99	116	121
" rejected	20	22	29	28
Per cent "	8.5	8.7	9.2	8.6

Of the four groups of elective subjects, each candidate is required to present two, but any candidate may, if he wish, be examined on three, or on all. That from nine to twelve per cent of the candidates have each year availed themselves of this liberty will appear from the following table, which shows the various combinations of elective groups offered in the last four years: —

Number of Candidates who offered	1880.	1881.	188 .	1883.
Latin, Greek, Mathematics, and Physical Science	2	4	6	7
Latin, Greek, and Mathematics	15	14	17	8
Latin, Greek, and Physical Science	7	5	11	12
Latin, Mathematics, and Physical Science . .	2	1	3	4
Greek, Mathematics, and Physical Science . .	..	1	..	..
Latin and Greek	159	177	204	216
Latin and Mathematics	17	13	12	15
Latin and Physical Science	20	25	41	41
Greek and Mathematics	..	2	5	4
Greek and Physical Science	4	..	3	7
Mathematics and Physical Science	10	11	13	12
Total number of candidates	236	253	315	326

The next table shows, for the same period, the number of candidates who offered each of the four elective groups:

	1880.		1881.		1882.		1883.	
Whole number of candidates	236		253		315		326	
Number offering		Per ct.		Per ct.		Per ct.		Per ct.
Latin	222	94	239	94	294	93	303	93
Greek	187	79	203	80	246	78	254	78
Mathematics .	46	19	46	18	56	18	50	15
Physical Science	45	19	47	18	77	24	83	25

It will be seen that the proportion of candidates offering each of the four groups has remained about the same in the last two years. The percentages for Latin and Greek are identical: the falling off in Mathematics is fully accounted for by the fact that the small number of candidates offering Mathematics in addition to Latin and Greek has been abruptly reduced by more than half, and the slight gain in Physical Science is due to a sudden increase in the still smaller number offering the rare combination of Greek and Physical Science. Both of these circumstances must be regarded as exceptional.

The Latin and Greek elective groups, together with the prescribed subjects, represent, in the present system, the requirements that were in force before the Faculty began the experiment of allowing a limited option in the examinations for admission. The amount of classical preparation required has indeed been somewhat reduced, and the present examinations demand, and have brought about, better methods of instruction in the classics than were formerly in use; but the end sought is substantially the same. The Mathematical and Physical groups, on the other hand, are pure additions to the old requirements, and are made up of studies which were formerly pursued by the student after his admission. In establishing these groups, the Faculty gave the candidate the liberty of reducing by about a year his study of Latin, or of Greek, or of both, and of substituting additional study in Mathematics or Physical Science. The following table has been prepared to show to what extent and in what ways the candidates who have entered on the present method in the past four years have made use of this liberty: —

	1880.	1881.	1882.	1883.
Whole number of candidates	236	253	315	326
Proportion of this number offering Latin and Greek (with or without other groups) . . . . Per ct.	77.5	79.1	$75.\dot{5}$	74.5
Number of candidates offering *all* the groups . . .	2	4	6	7
Number of candidates offering *three* groups	24	21	31	24
Proportion of these offering Latin and Greek. Per ct.	91.7	90.4	90.3	$83.\dot{3}$
,, offering Latin without Greek . . ,,	8.3	4.8	9.7	$16.\dot{6}$
,, ,, Greek without Latin . . ,,	. . .	4.8	. . .	. . .
Number of candidates offering *two* groups	210	228	278	295
Proportion of these offering Latin and Greek. Per ct.	75.7	77.6	73.4	73.2
,, offering Latin without Greek . . ,,	17.6	16.6	19.1	19
,, ,, Greek without Latin . . ,,	1.9	.9	2.9	3.7
,, ,, neither Latin nor Greek ,,	4.8	4.8	4.7	4.1

The variations here shown are not greater than might reasonably be expected to occur from year to year, and it would not be safe to infer from them any tendency in the choices of candidates. It appears that in these four years about three-quarters of the candidates have presented the full classical requirements; from seventeen to twenty-three per cent have offered one of the two language groups without the other, while a very few — never rising as high as one twentieth of the whole number of candidates offering two groups — have come prepared in the minimum language requirements only.

Of the two hundred and ninety-eight candidates admitted to college, five by passing further examinations, or in virtue of work they had done as Special Students, gained admission to the Sophomore class, two hundred and thirty-seven entered the Freshman class, and two have registered as Special Students. The votes admitting two others were rescinded when it was found they had been guilty of fraud in the examinations. Of the remaining fifty-two, it appears on inquiry that twenty-two have gone to other colleges; that six of these, with eighteen others, intend to enter this college at some future time; and that eleven for various reasons do not intend to go to college at all. One has not been heard from. As a result, the present Freshman class, in spite of the larger number of candidates admitted, is somewhat smaller than that of last year. The composition of the present class is as follows: —

Admitted to College in 1883	237
Previously admitted	11
Removed from a higher class	5
Total	253

The present number of students of all kinds is nine hundred and seventy-one. The increase over last year in the number of undergraduates is twenty; in the whole number of students, forty.

The whole number of candidates who offered themselves for a preliminary examination this year was two hundred and eighty-four, of whom two hundred and forty-four obtained certificates, having passed in at least five subjects. The following table exhibits the general results of the preliminary examinations on the present requirements for four years: —

Number of candidates who passed in	1880.	1881.	1882.	1883.
Five subjects	30	38	40	27
Six "	24	30	28	30
Seven "	31	46	46	60
Eight "	33	65	58	66
Nine "	22	17	33	29
Ten "	10	19	24	24
Eleven "	..	5	4	8
Received certificates	150	220	233	244
Failed to pass in five subjects	64	46	54	40
Total number of candidates . .	214	266	287	284

The next table shows, for the same period, the proportion of candidates examined in each subject under the present method, and the proportion of failures in each: —

Preliminary Examinat'n. 1880, 214 Candidates. 1881, 266 " 1882, 287 " 1883, 284 "	Caesar and Virgil.	Latin at Sight.	Xenophon or Greek Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Geometry.	Physics.	English.	French.	German.
Percentage of the whole number of candidates who were examined in each study.												
1880	92	88	78	76	84	97	87	46	61	53	64	5
1881	88	86	78	79	76	97	82	46	74	61	54	5
1882	93	93	77	83	83	97	88	41	75	4	51	5
1883	93	92	76	81	84	98	91	49	81	66	51	9
Percentage of failure among those examined in each study.												
1880	25	25	25	26	39	22	50	61	7	34	21	30
1881	15	19	28	24	22	21	35	41	17	19	17	14
1882	20	26	9	30	27	17	37	27	12	37	17	14
1883	6	14	15	24	15	15	53	19	13	28	28	8

The discipline of the College during the past year required the action of the Faculty in very few cases. Three Sophomores were suspended for various periods, one for taking into an examination room a paper containing notes on the subject of the examination, another for presenting a theme which was not his own, the third for intoxication; and a student belonging to another department of the University was required to vacate a room he occupied in a college building for harboring a disorderly party there. The general good order of the College was interrupted in one instance, when the excitement of a victory in a ball match led to a serious disturbance, and a large crowd of students celebrated the success of their champions not merely with the boisterous demonstrations of delight that are natural under the circumstances, but with a bonfire and the explosion of fireworks, which are not without danger to college property. Such occurrences, however, are rare; on all ordinary occasions the unruly element which may be presumed to exist in any body of a thousand young men, is kept in control by the powerful sentiment of the great majority, which has proved a far more effective instrument for the maintenance of good order and gentlemanly conduct than the system of minute regulations formerly in force. The Faculty has recognized the value of this sentiment, which is not likely to err so far as it is rightly informed, by appointing committees to confer with students on subjects of current interest, to ascertain their wishes and feelings, to aid them with counsel or suggestion, and to advise the Faculty, in case any action of that body appears to be called for. These conferences have not been fruitless. The committee on athletic sports has already removed some serious abuses, and without infringing on the reasonable liberty of the student, will no doubt effect still further improvements in this important feature of college life. A committee appointed to inquire into the subject of initiations into college societies has, it is hoped, done something to mitigate the barbarity of some of the practices which tradition has still maintained in connection with these ceremonies. It was at the suggestion of the committee on initiations that the Faculty, near the close of the year, decided to appoint, for the purpose of providing a regular mode of communication with the students, a standing committee, who shall from time to time invite students to join them in conference on such subjects as it may be useful to discuss in this manner. The committee, of which the President of the University is, by the terms of the vote, chairman, is to try this interesting experiment during the present academic year.

Full information concerning the instruction given in the College in the year 1882–83 will be found in the tables on pages 58–71, which contain a detailed statement of the work done in each course, the names of the instructors, the number of hours a week of instruction, and the numbers of students of various classes and departments,* as well as the total number of students, in regular attendance.

In addition to the regular prescribed and elective studies counting towards the degree, instruction in certain subjects was given to voluntary classes. In Elocution instruction was given by Mr. H. D. Jones to forty-two Seniors, thirty-nine Juniors, thirty-nine Sophomores, and eighty-one Freshmen. The students were taught mainly in classes, but separate instruction was given to individ-

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* To designate the various kinds of students in the several courses, the following abbreviations are used: Se. for Senior, Ju. for Junior, So. for Sophomore, Fr. for Freshman, Sp. for Special Student, Gr. for Graduate Student, Law for Law Student, Di. for Divinity Student, Sc. for Scientific Student, and Bu. for Bussey Student.

PRESCRIBED STUDIES.

Instructors.	Courses of Instruction.	Hours per week.	Students.	Total number of Students.
	FRESHMAN STUDIES.			
	Greek.			
Mr. Hawes	1. [*Minimum Course.*] — Herodotus (Selections). — Homer (Iliad, Books IV., and VI.-IX.). — Grammar and Composition. — Selections from Grote's History of Greece	3	2 Se., 1 Ju., 1 So., 47 Fr., 3 Sp.	54
Messrs. Croswell, Parker, and Hawes	2. [*Maximum Course.*] — Lysias (Five Orations). — Plato (Apology). — Euripides (Alcestis). — Homer (Odyssey, Four Books)	3	2 So., 105 Fr., 1 Sp.	108
Profs. Allen and Dyer, and Mr. Croswell	3. [*Course for Advanced Sections.*] — Lysias (Five Orations). — Plato (Apology). — Homer's Odyssey (Six Books). — Euripides (Medea). — Translation at Sight. — Composition	3	3 So., 99 Fr.	102
	Latin.			
Mr. Preble	1. [*Minimum Course.*] — Cicero (Orations against Catiline). — Virgil (Selections from Aeneid VII.-XII.). — Ovid (Selections from the Elegiacs). — Composition. — Translation at sight	3	14 Fr., 4 Sp.	18
Messrs. Preble and Parker	2. [*Maximum Course.*] — Livy (Books XXI., XXII.). — Cicero (De Amicitia). — Horace (Odes, Books I.-III.). — Composition. — Translation at sight	3	129 Fr., 9 Sp.	138
Prof. Lane and Mr. Preble	3. [*Course for Advanced Sections.*] — Livy and Cicero, as in 2. — Horace (Odes and Epodes). — Plautus (Miles Gloriosus). — Translation at	3	107 Fr.	107

	French.			
Prof. Jacquinot	Brachet's Petite Grammaire Française (1ᵉ partie). — Bôcher's Reader. — G. Sand (La Famille de Germandre). — O. Feuillet (Le Roman d'un jeune homme pauvre)	3	1 Se., 3 Ju., 22 Fr., 9 Sp., 4 Sc.	39
	Mathematics.			
Prof. Byerly and Dr. B. O. Peirce	1. [*Minimum Course.*] — Solid Geometry. — Plane Trigonometry. — Analytic Geometry.	2 till Xmas, then 3	2 Se., 1 Ju., 228 Fr., 7 Sp.	238
Prof. Peirce	2. [*Maximum Course.*] — Analytic Geometry (Lectures and Exercises)	2 till Xmas, then 3	1 Se., 3 So., 34 Fr., 4 Sp., 1 Sc.	43
Prof. C. J. White	3. Advanced Algebra	1 till May 1	254 Fr., 10 Sp.	264
	Physics.			
Dr. Hall	1. [*Minimum Course.*] — Deschanel's Physics (Selections from Vols. I., II., and IV. as far as the Undulatory Theory of Light	2	1 Se., 5 Ju., 4 So., 193 Fr., 6 Sp., 4 Sc.	213
Dr. Hall	2. [*Maximum Course.*] — Deschanel's Physics (as above). — Maxwell's Heat (Selections)	2	1 Se., 55 Fr., 2 Sp.	58
	Chemistry.			
Prof. Cooke	Nineteen Lectures	1	246 Fr.	246
	SOPHOMORE STUDIES.			
Prof. A. S. Hill, Messrs. Drennan and Wendell	1. Rhetoric. — Hill's Principles of Rhetoric. — Burke's Speech on Conciliation. — Twenty lectures on English and American authors	2	4 Ju., 181 So., 2 Fr., 7 Sp., 1 Sc.	195
Messrs. Drennan and Wendell	2. Six Themes, corrected and rewritten		7 Ju., 198 So., 1 Fr., 7 Sp., 1 Sc.	214

PRESCRIBED STUDIES. — CONTINUED.

	JUNIOR STUDIES.			
Messrs. Drennan and Wendell	1. Six Themes, corrected and rewritten		8 Se., 196 Ju., 4 So., 2 Sp.	205
Dr. Snow	2. (*a*) Four Forensics		5 Se., 174 Ju., 7 So., 1 Sp.	187
	(*b*) Theses substituted for Forensics		28 Ju.	28
	SENIOR STUDIES.			
Dr. Snow	(*a*) Four Forensics		178 Se., 5 Ju.	183
	(*b*) Written work substituted for Forensics		24 Se.	24

ELECTIVE STUDIES.

Instructors.	Courses of Instruction.	Hours per week.	Students.	Total number of Students.
	SEMITIC LANGUAGES.			
Prof. Lyon	1. Hebrew. — Davidson's Grammar and Harper's Vocabularies. — Hebrew Bible (Selections from Genesis, Judges, and the Psalms)	8	2 Ju., 4 Di.	6
Prof. Toy	2. Hebrew (Advanced Course)	2	8 Di.	8
Prof. Toy	3. Aramaic, Classical and Jewish	1	Omitted in 1882–88.	
Prof. Lyon	4. Assyrian. — Grammar (Lectures). — Delitzsch's Lesestücke	2	1 Di.	1
Prof. Toy	5. Arabic. — Wright's Grammar and Reader. — Thousand and One Nights	2	1 Ju., 1 Di.	2

Prof. Lanman	3. Sanskrit. — Kalidasa's Malavika and Agnimitra. — Açvalayana's Arhyasutra. — The Çata-patha-brahmana	2	2 Gr.	2
Prof. Lanman	4. Zend.	2	Omitted in 1882–83.	
	GREEK.			
Prof. Dyer	1. Thucydides (Books VI. and VII.). — Sophocles (Ajax). — Aristophanes (Birds). — Euripides (Bacchae). — Aeschylus (Prometheus)	3 or 2	1 Gr., 30 So., 1 Fr., 1 Sp. 7 So.	40
Prof. J. W. White	2. Homer	3	Omitted in 1882–83.	
Mr. Croswell	3. Herodotus (Four books, with translation at sight from other books)	3	2 Se., 9 Ju., 49 So., 2 Fr., 2 Sp.	64
Mr. Croswell	4. Composition (First Course). — Sidgwick's Greek Prose Composition	1	2 Ju., 31 So.	33
Prof. Dyer	5. Composition (Second Course). — Sidgwick, Part IV. (Rhetorical exercises). — Sargent and Dallin's Materials and Models	1	1 Gr., 3 Ju.	4
Prof. J. W. White	6. Composition (Third Course). — Translations in the style of Plato	1	5 Se.	5
Prof. J. W. White	7. Thucydides (Selections from Books I., II.). — Demosthenes (De Corona). — Aeschines (Contra Ctesiphontem, selections). — Lectures on the Political History of Athens	3	3 Se., 7 Ju., 2 So.	12
Prof. Dyer	8. Plato (Republic, Books II., III., VI., VII., and parts of I., IV., V.). — Aristotle (Ethics, Books I., II., VI., X., and half of III.). — Theses.	3	1 Gr., 11 Se., 7 Ju.	19
Prof. J. W. White	9. Aeschylus (Persians). — Sophocles (Oedipus Rex and Antigone). — Aristophanes (Frogs). — Extracts from the Greek Lyric Poets. — Lectures and Theses	3	3 Gr., 14 Se., 10 Ju., 1 So., 1 Sp.	29
Prof. Sophocles	10. Arrian. — Polybius	2	Omitted in 1882–83.	
Prof. J. W. White	11. The Life of the Ancient Athenians. Forty-five Lectures, illustrated by the stereopticon	3 a fortnight.	5 Gr., 4 Se., 6 Ju., 2 So., 3 Sp.	20
Prof. Allen	12. Introduction to the critical study of Homer. — Lectures on the History of Homeric Studies and of the Homeric text, on Homeric verse and versification, and on the Homeric language. — Discussion of Iliad, Book I. (60 vss.). — Investigation of special questions, under the direction of the Instructor	2	5 Gr., 1 Sp.	6

ELECTIVE STUDIES. — CONTINUED.

Prof. Goodwin	13. The Political and Legal Antiquities of Athens	2	Omitted in 1882–83.	
Prof. Goodwin	14. Plato (Theaetetus). — Aristotle (Politics; Metaphysics). — Zeller's History of Greek Philosophy	2	Omitted in 1882–83.	
Prof. Sophocles	15. Pindar	2	Omitted in 1882–83.	
	LATIN.			
Prof. Smith	1. Terence (Phormio, Andria, and two acts of Hautontimorumenos). — Cicero (Selected Letters). — Tacitus (Agricola). — Horace (Selected Satires and Epistles). — Translation at sight	3 or 2	3 Ju., 50 So., 1 Fr., 3 Sp. 1 Ju., 11 So.	69
Prof. Greenough	2. Cicero. — Terence. — Horace. — Translation at sight	2	Omitted in 1882–83.	
Mr. Preble	3. Composition (First Course). — Nixon's Parallel Extracts. — Prepared Exercises	1	3 Ju., 34 So., 1 Sp.	38
Prof. Smith	4. Latin Poetical Literature. — Lectures on the Latin Poets, with illustrative readings from Thackeray's Anthology	3	3 Se., 3 Ju., 1 So., 1 Sp.	8
Mr. Preble	5. Latin Prose Literature. — Cicero (Philippics). — Sallust (Jugurtha). — Suetonius	3	3 Gr., 4 Se., 22 Ju., 7 So.	36
Prof. Lane	6. Juvenal (Selected Satires). — Pliny (Epistles). — The Dialogus de Oratoribus	3	2 Se., 20 Ju., 5 So.	27
Mr. Croswell	7. Composition (Second Course). — Wilkins's Latin Prose Composition	1	2 Se., 2 Ju.	4
Prof. Lane	8. Lucretius (Selections). — Plautus (Five Plays)	3	12 Se., 3 Ju., 1 Sp.	16
Mr. Preble	9. Composition (Third Course). — Potts's Hints and Exercises	1	4 Se., 1 Ju.	5
Prof. Greenough	10. The Private Life of the Romans, chiefly as illustrated by works of art	2	Omitted in 1882–83.	
Prof. Allen	11. Practice in speaking Latin, in connection with the study of Ovid's Metamorphoses (Books I., II.)	1	3 Gr., 1 Ju.	4
Prof. Allen	12. The Roman Drama. — Lectures on the history, structure, and versifi-			

	which was discussed by the class. The exercises were conducted in Latin			
	ENGLISH.			
Prof. Child	1. Chaucer (Selections from the Canterbury Tales). — Bacon (Essays). — Milton (Selected Poems)	3	3 Se., 5 Ju., 9 So., 5 Sp.	22
Prof. Child	2. Shakspere (Eight Plays)	3	11 Se., 14 Ju., 5 So., 1 Fr., 3 Sp.	34
Prof. Child	3. Anglo-Saxon. — Sweet's Reader. — Beówolf	2	1 Se., 3 Ju., 1 So., 1 Sp.	6
Prof. Child	4. Early English. — Mätzner's Altenglische Sprachproben. — Morris's Specimens of Early English	3	2 Se., 1 Ju.	3
Prof. A. S. Hill	5. Rhetoric and Themes (Advanced Course). — Sixteen Themes	3	1 Gr., 11 Se., 13 Ju.	25
	6. Oral Discussion		Omitted in 1882–83.	
Prof. A. S. Hill	7. English Literature of the Eighteenth and Nineteenth Centuries. — Stopford Brooke's Primer of English Literature. — Ward's English Poets (Vol. III.). — Authors of the Eighteenth Century	1	2 Se., 6 Ju., 9 So.	17
	GERMAN.			
Mr. Lutz	1. Eichendorff (Die Glücksritter). — Freytag (Die Journalisten; Bilder aus der neuen Zeit; part of Die Stillen im Lande; Aus dem Staate Friedrich's des Grossen). — Heyse (L'Arrabiata; Das Mädchen von Treppi; Die Blinden). — Translation from English into German	3	8 Se., 10 Ju., 69 So., 6 Fr., 4 Sp.	97
Prof. Bartlett	2. Translation at sight, and practice in writing German. — L. Stacke's Deutsche Geschichte (Vol. VI.). — Der Neue Plutarch (Vol. II., VI.)	3	3 Se., 43 So., 1 Sp.	47
Prof. Bartlett	3. Subjects in German History and Literature. — Stacke's Deutsche Geschichte (Vol. VI.). — The Lyrics and Balads of Goethe, Schiller, Lessing, Körner, Uhland, Chamisso, Bürger, and Rückert. — Lessing (Emilia Galotti and Minna von Barnhelm). — Practice in writing and speaking German	3	8 Se., 12 Ju., 1 So., 3 Sp.	24

ELECTIVE STUDIES. — CONTINUED.

Prof. Cook	4. Goethe (Selected Poems; Götz von Berlichingen). — Schiller (Fiesco; Don Carlos). — Zschokke (Der todte Gast, read at sight)	3	7 Se., 34 Ju., 4 So.	45
Prof. Bartlett	5. German Literature of the Eighteenth Century. — Extracts from the Literary Histories of Kurz, Hettner, and Koenig. — Goethe (Götz von Berlichingen; Iphigenie; Tasso; Faust). — Schiller (Fiesco; Wallenstein; Lyrics and Ballads). — Lessing (Emilia Galotti; Nathan der Weise). — Practice in writing and speaking German	3	12 Se., 4 Ju., 3 So., 1 Fr.	20
Prof. Cook	6. Goethe (Faust, Part I.; Iphigenie). — Freytag (Soll und Haben). — Goethe (Reineke Fuchs, read at sight)	3	23 Se., 1 So.	24
Mr. Sheldon	7. German Literature before Luther. — Hartmann von Aue (Der arme Heinrich). — Nibelungen Lied. — Walther von der Vogelweide. — Lectures (in German) on Old German Literature. — Theses (two by each student; one on a grammatical, the other on a literary topic)	3	1 Gr., 4 Se.	5
Mr. Sheldon	8. Introduction to Germanic Philology. — Sievers's Grundzüge der Phonetik. — Sweet's Handbook of Phonetics. — Ulfilas. — Braune's Althochdeutsches Lesebuch. — Theses	2	2 Se.	2
	FRENCH.			
Prof. Jacquinot	1. Brachet's Petite Grammaire Française (2e partie). — Sandeau (Sacs et Parchemins). — About (Germaine). — Augier (Ceinture dorée). — Labiche (La Poudre aux yeux)	3	1 Se., 7 Ju., 33 So., 2 Fr., 4 Sp.	47
Prof. Bôcher	2. La Fontaine (Fables, all read, seven committed to memory). — George Sand (La Mare au diable; 494 lines committed to memory). — Racine (four plays). — Taine (La Fontaine et ses Fables). — Guerard's Grammaire Française. — Composition (oral and written synopses of the works read)	3	2 Se., 4 Ju., 24 So., 1 Fr.	31
Prof. Bôcher	3. Molière (all). — Corneille (three plays). — Brueys and Palaprat (Le Grondeur). — Regnard (Le Joueur). — Paul Albert (Littérature Française jusqu'au xvii siècle). — G. Sand (La Mare au diable; 600 lines	3	3 Gr., 4 Se., 10 Ju., 4 So., 1 Fr.	22

	ITALIAN.]			
Mr. Sheldon	1. Toscani's Grammar. — De Amicis (Racconti Militari). — Manzoni (I Promessi Sposi). — Translation of easy English into Italian	3	1 Se., 7 Ju., 3 So., 2 Fr., 1 Sp.	14
Mr. Sheldon	2. Gherardi del Testa (six plays). — Ariosto (Orlando Furioso). — Tasso (Gerusalemme Liberata). — Silvio Pellico (Francesca da Rimini). — G. Giacosa (one play). — Translation from English into Italian	3	3 Se., 1 Ju.	4
Prof. Nash	3. Boccaccio (Selections from the Decamerone). — Petrarca (Le Rima). — Dante (Lectures on the Divina Commedia, with readings from the Inferno). — Lectures on the history of Italian Literature, and on Grammar. — Practice in translation at sight, and in writing and speaking Italian.	3	4 Se.	4
Prof. Norton	4. Dante	2	Omitted in 1882–83.	
	SPANISH.			
Prof. Nash	1. Josse's Grammar. — Gil Blas. — El Eco de Madrid. — Prose Composition	3	11 Se., 9 Ju., 5 So., 1 Fr., 1 Sp., 1 Di.	28
Prof. Nash	2. De Moratin (La Comedia nueva; El viejo y la niña). — Martinez de la Rosa (Lo que puede un empleo). — Breton de los Horreros (Marcela). — Hartzenbusch (La coja y el encogido; Juan de las Viñas). — Critical study of one play. — Prose Composition. — Reading and Translation at sight	3	1 Gr., 4 Se., 3 Ju.	8
Prof. Nash	3. Calderon (El Mágico Prodigioso). — Lope de Vega (La Estrella de Sevilla; Si no vieran las mujeres). — Cervantes (Selections from Don Quijote). — Literary criticisms and biographies. — Prose Composition. Practice in reading at sight and in speaking Spanish	3	6 Se., 1 Ju.	7
	PHILOSOPHY.			
Prof. Palmer	1. Logic and Metaphysics. — Jevons's Logic. — Ferrier's Lectures on Greek Philosophy	3	8 Se., 35 Ju., 32 So., 1 Sp.	76
Dr. Royce	2. Logic and Psychology. — Jevons's Logic. — Fowler's Inductive Logic. — Taine on Intelligence. — Lectures on Mental Processes	3	2 Se., 17 Ju., 19 So., 1 Fr., 3 Sp., 1 Sc.	43

ELECTIVE STUDIES. — CONTINUED.

Prof. Palmer	3. Ethics. — Lectures on English Ethics before Mill. — Mill's Utilitarianism. — Kant's Theory of Ethics. — Theses	3	29 Se., 16 Ju., 1 Sp.	46
Dr. Royce	4. English Philosophy. — Locke's Essay on the Human Understanding. — Berkeley's Principles of Human Knowledge. — Hume's Essays on Inquiry, Miracles, and Providence. — Lectures. — Theses	3	4 Se., 12 Ju., 2 Sp.	18
Prof. Bowen	5. Earlier French Philosophy and German Philosophy from Kant to Hegel. — Bouillier's Philosophie Cartésienne. — Bowen's Modern Philosophy. — Meiklejohn's Kant's Critique of Pure Reason. — Lectures	3	8 Se., 15 Ju., 2 Di.	25
Prof. Bowen	6. German Philosophy of the Present Day. — Schopenhauer's Die Welt als Vorstellung und Wille. — Hartmann's Philosophie des Unbewussten	3	4 Se.	4
Prof. Palmer	7. Hegel's Rechtsphilosophie	2	2 Gr., 4 Se., 2 Di.	8
Dr. Royce	8. Advanced Psychology. — Lectures on the purpose, scope, and main problems of Psychology. — Ribot's Psychologie Allemande, with lectures. — Theses	2	2 Se.	2
Prof. F. G. Peabody	9. Philosophy of Religion	1	2 Se., 1 Ju., 10 Di.	13
Prof. F. G. Peabody	10. Ethics in its relation to Religion. — Spencer's Data of Ethics. — Maurice's Social Morality	1	4 Se., 8 Di.	12
	POLITICAL ECONOMY.			
Dr. Laughlin and Mr. Taussig	1. Mill's Principles of Political Economy. — Lectures	3	1 Gr., 22 Se., 113 Ju., 13 So., 3 Sp., 2 Law, 1 Sc.	155
Dr. Laughlin	2. Cairnes's Leading Principles of Political Economy. — History of Political Economy. — McKean's Condensation of Carey's Social Science. — Lectures	3	2 Gr., 24 Se., 8 Ju., 1 Sp.	35
Dr. Laughlin	3. Studies in Land Tenures of England, Ireland, and France. — Theses	1	1 Gr., 6 Se.	7

	tory of the Romans under the Empire. — Gibbon's Decline and Fall of the Roman Empire. — Lectures		1 Fr.	
Dr. Young	5. Legal Institutions of the Franks, the Anglo-Saxons, and the Normans	3	Omitted in 1882–83.	
Dr. Young	6. The General History of Europe from the beginning of the Ninth to the end of the Thirteenth Century	3	8 Se., 3 Ju., 2 So.	13
Prof. Gurney	7. Constitutional and Legal History of France to the end of the Fifteenth Century	2	Omitted in 1882–83.	
Dr. Young	8. Constitutional and Legal History of England to the Seventeenth Century	3	2 Gr., 13 Se., 14 Ju.	29
Prof. Emerton	9. History of the Protestant Reformation and the Roman Catholic Reaction. — Lectures	2	13 Di.	13
Mr. Macvane	10. European History during the Seventeenth Century and the first half of the Eighteenth	3	2 Gr., 36 Se., 42 Ju., 1 So., 3 Sp.	84
Mr. Macvane	11. European History from the middle of the Eighteenth Century	3	Omitted in 1882–83.	
Dr. Snow	12. Constitutional and Political History of the United States from 1789 to 1850. — Lectures	3	1 Gr., 85 Se., 62 Ju., 8 So., 6 Sp., 1 Sc.	163
Prof. Torrey	13. Forms of Government and Political Constitutions (particularly in Continental Europe) since 1789	2	2 Gr., 13 Se.	15
Prof. Torrey	14. History of Modern Treaties. — Elements of Public International Law	3	2 Gr., 18 Se.	20
Prof. Everett	15. Studies in the Comparative History of Religions	2	Omitted in 1882–83.	
Prof. Emerton	16. Practice in the Study and Use of Historical Sources. Subject for the year: Church and State in the Eleventh Century. Each student prepared five theses, embodying original investigations.	2	1 Gr., 4 Se.	5
	ROMAN LAW.			
Dr. Young	1. Gneist's Institutionum et Regularum Juris Romani Syntagma. — Mommsen and Krueger's Corpus Juris Civilis (Vol. I.)	3	1 Gr., 10 Se., 11 Ju., 2 So.	24
Prof. Gurney	2. The Law of Inheritance (chiefly Testamentary) in the Institutes of Gaius and Justinian, and Selections from the Digest (Books xxviii.–xxx.)	1	3 Se., 4 Ju., 5 So., 1 Fr.	13

ELECTIVE STUDIES. — CONTINUED.

	THE FINE ARTS.			
Mr. Moore	1. Principles of Delineation, Color, and Chiaroscuro. — Ruskin's Elements of Drawing and Modern Painters. — Pyne's Perspective. — Lectures. — Practice in Drawing	3	9 Se., 10 Ju., 9 So., 1 Fr., 1 Sp., 3 Sc.	33
Mr. Moore	2. Principles of Design in Painting, Sculpture, and Architecture. — Lectures. — Practice in Drawing. — Outside reading required in Sir Joshua Reynolds's Discourses, Woltmann's History of Painting, Ruskin's Seven Lamps of Architecture and Stones of Venice	2	1 Se., 1 Ju., 1 Sp.	3
Prof. Norton	3. Ancient Art	3	Omitted in 1882–83.	
Prof. Norton	4. Art in Italy, from the conquest of Greece by the Romans to the year 1600. — Lectures	3	2 Gr., 41 Se., 12 Ju., 6 So., 8 Sp., 3 Di.	72
Prof. Norton	5. Greek Art. — Reber's History of Ancient Art. — Lectures	3	17 Se., 15 Ju., 1 So., 3 Sp., 1 Di.	37
Prof. Norton	6. Romanesque and Gothic Art, from the year 1000 to 1350	1	Omitted in 1882–83.	
	MUSIC.			
Prof. Paine	1. Richter's Harmony. — The Instrumental Music of Haydn, Mozart, Beethoven, and their successors	3	5 Se., 7 Ju., 4 So., 1 Fr., 1 Sp.	18
Prof. Paine	2. Richter's Counterpoint	3	2 Se., 4 Ju., 1 Sp.	7
Prof. Paine	3. History of Music. — Lectures	3	9 Se., 5 Ju., 1 So.	15
Prof. Paine	4. Richter's Canon and Fugue	3	1 Ju.	1
Prof. Paine	5. Free Thematic Music. — Forms of Modern Instrumental Music	2	1 Gr.	1
	MATHEMATICS.			

	Calculus, Differential Equations, and the Equilibrium of Fluids. Text-books: Byerly's Differential and Integral Calculus, Besant's Hydro-mechanics, and Walton's Problems in Hydrostatics	3	7 Ju., 1 So., 2 Sp.	10
Prof. Peirce	5. Quaternions (First Course).—Linear and Vector Function and Quadrics. — Lectures and Problems, with the use of Hardy's, Tait's, and Hamilton's treatises	3	1 Se., 3 Ju.	4
Prof. Eustis	6. Descriptive Geometry, Perspective, and Shades and Shadows. — Church's Descriptive Geometry, with additional problems. — Lectures	3	1 Se., 1 So., 1 Sc.	3
Prof. Peirce	7. Analytic Mechanics (Second Course). — Lectures and Problems, following Routh's Rigid Dynamics, but treating the theory by Quaternions	3	1 Gr., 3 Se.	4
Prof. Byerly and Dr. B. O. Peirce	8. Arbitrary Functions and the Theory of the Potential. — Lectures	3	1 Gr., 3 Se., 1 Sc.	5
Prof. Peirce	9. Laplace's Coefficients and Spherical Harmonics, studied from Pierce's Analytic Mechanics and Maxwell's Electricity and Magnetism	1	1 Gr., 3 Se.	4
	Physics.			
Prof. Lovering	1. Astronomy, Optics, and Acoustics. — Herschel's Outlines of Astronomy. — Deschanel's Optics and Acoustics. — Lectures	3	1 Se., 2 Ju., 8 So., 2 Sp., 1 Sc.	14
Prof. Trowbridge	2. Practical Exercises in the Laboratory, including the use of instruments of precision. — Thresh's and Kaulrausch's Physical Measurements	3	5 Se., 3 Ju., 16 So., 2 Sp.	26
Prof. Trowbridge	3. The Correlation and Conservation of Forces. — Maxwell's Heat. — Tait's Recent Advances in Physical Science	2	2 Se., 2 Ju., 1 So., 1 Sp.	6
Prof. Lovering	4. Deschanel's Electricity and Magnetism. — Lloyd's Undulatory Theory of Light. — Lectures	3	1 Gr., 1 Se., 2 Ju., 4 So., 2 Sp.	10
Prof. Gibbs	5. The Spectroscope and its Applications. — Thermodynamics and Thermics, including the Applications of Heat. — Lectures	3	1 Gr., 2 Se.	3
Prof. Trowbridge	6. Experimental Physics. — Maxwell's Electricity and Magnetism. — Rayleigh's Theory of Sound. — Laboratory Work	3	1 Gr., 1 Se., 1 Ju., 2 Sp.	5
Prof. Trowbridge	7. Mathematical Physics. — Maxwell's Electricity and Magnetism. — Laboratory Work	3	1 Gr., 1 Se., 1 Ju.	3

ELECTIVE STUDIES. — CONTINUED.

	CHEMISTRY.			
Prof. Jackson and Dr. Mabery	1. Descriptive Chemistry. — Lectures, Recitations, and Laboratory Work	3	3 Se., 10 Ju., 40 So., 3 Sp., 3 Sc.	59
Prof. Cooke and Mr. Huntington	2. Crystallography, Crystal Optics, Mineralogy, and Lithology (lectures). — Determinative Mineralogy (in the Mineralogical Cabinet)	3	4 Se., 17 Ju., 4 So., 1 Sc.	26
Prof. H. B. Hill and Dr. Mabery	3. Qualitative Analysis. — Lectures and Laboratory Work	3	7 Se., 28 Ju., 1 Sp., 2 Sc.	38
Prof. Cooke and Dr. Kinnicutt	4. Quantitative Analysis. — Laboratory Work	3	7 Se., 8 Ju., 1 Sp., 2 Sc.	18
Prof. H. B. Hill	5. The Carbon Compounds. — Lectures and Laboratory Work	3	6 Se., 2 Ju., 1 Sp.	9
Prof. Cooke	6. Advanced Inorganic Chemistry. — Laboratory Work on Vapor and Gas Density, and on Thermo-Chemistry	3	4 Se.	4
Prof. Cooke	7. Crystallography and the Physics of Crystals		Omitted in 1882–83.	
Prof. Storer	8. Agricultural Chemistry	3	5 Bu.	5
Prof. H. B. Hill	9. Advanced Organic Chemistry. — Laboratory Work and Thesis		1 Se.	1
	NATURAL HISTORY.			
Mr. Davis	1. Physical Geography and Meteorology. — Reclus's Earth and Ocean	3	25 Se., 17 Ju., 20 So., 2 Fr., 4 Sp., 2 Sc.	70
Dr. Mark	2. Zoölogy. — Huxley's Elementary Lessons in Physiology. — Lectures. — Thesis	3	39 Se., 34 Ju., 25 So., 2 Fr., 2 Sp., 2 Sc.	104
Prof. Goodale and Mr. Jones	3. Botany. — Gray's Text-Book. — Lectures and Laboratory Work	3	10 Se., 9 Ju., 5 So., 1 Fr., 1 Sp., 1 Sc.	27
Prof. Shaler and Mr. Davis	4. Geology. — Dana's Manual. — Lectures, Discussions, and Field Work	3	1 Gr., 75 Se., 54 Ju., 42 So., 2 Fr., 8 Sp., 1 Di., 2 Sc.	185

	perimental Vegetable Physiology			
Prof. Farlow	12. Structure and Development of Cryptogams. — Laboratory Work	3	1 Se., 2 Sc.	3
Prof. Lyman	13. Anatomy and Histology of Domestic Animals. — Lectures and Laboratory Work		3 Fr., 1 Sp., 5 Bu.	9
Prof. Shaler	14. Palaeontology. — Lectures and Laboratory Work	3	2 Gr., 3 Se., 2 Sc.	7
Prof. Shaler	15. Historical Geology (with laboratory work)	3	Omitted in 1882–83.	
Prof. Shaler	16. Geological Field and Laboratory Work, for training in the principles of Geological Surveying and in the preparation of reports. — Ten excursions with the Instructor; fifteen days of private practice in the field		1 Ju.	1
Prof. Shaler	17. History of Geological Opinions	1	Omitted in 1882–83.	
Prof. Whitney	18. Economical Geology. — Lectures.	2	1 Gr., 4 Se., 1 Sc.	6
Prof. Whitney and Dr. Wadsworth	19. Geology (for advanced special students). — Field Work. — Laboratory Work in Lithology (about six hours a day).		1 Gr., 1 Sc.	2

uals, when needed, so far as the time of the instructor The Seniors and Juniors were taught in four sections tion receiving two hours of instruction a week; the S and Freshmen in two sections each, with one hour of a week. In Physics a course of weekly lectures was Professor Lovering, and a similar course on Physiolog giene by Professor Sargent. Further opportunities of i used to a considerable extent by the students of the C offered by the University in the courses of public lect each year by distinguished specialists. In 1882–83 dred and twelve such lectures were given on subjects with Theology, Philosophy, Classical Philology, A History, Political Economy, English Literature, Physi Lithology. The Evening Readings in Ancient and Mo sics, given by instructors in the College, were fort number. Selections were read from Assyrian Literatu fessor Lyon; Homer, by Professor Palmer; Sophocle fessor Dyer; Euripides, by Professor Dyer; Theo Professor Croswell; Plato by Professors Allen a Plautus, by Mr. Hawes; Terence, by Mr. Preble; by Professor Croswell; Virgil, by Mr. Parker; Cl Professor Child; German Authors, by Mr. Lutz.

The scheme of instruction for the year 1883–84, which gaged the attention of the Faculty during March and sents a large number of new courses and a better orga the studies in some departments. The appointment of ant professor in Political Economy enabled the Faculty the amount of instruction in a subject which is no with great zeal by large numbers of students. Of courses now offered, the first two present the theoretic the subject. Course 1 is an introductory course, d meet the wants both of the general student, and of propose to extend their studies to the special topics w the subjects of the advanced courses. It is devoted chi exposition and illustration of the general principles o Economy, but also includes a course of lectures on the of banking, with a critical review of the public finar United States, chiefly since the year 1861. Course only course required as a preparation for any of the courses; but for the benefit of students who wish to m nd extended studies in Political Economy, a second course is provided, in which the subject is treated his- a critical examination and comparison of the theo- ing writers. These are both full courses. In the first Dunbar and Laughlin both give instruction ; the second d by Professor Dunbar. Of the remaining five courses, ur are new, two are full courses, with three or two week, while three, having each one exercise a week, are lf-courses. The latter are devoted to the treatment of ics: The Economic Effects of Land Tenures in Eng- nd, France, and Germany, by Professor Laughlin; slation in the United States, by Dr. Taussig; Com- the Financial Systems of France, England, Germany, ited States, by Professor Dunbar. One full course, y Professor Laughlin, is devoted to the investigation economic questions of contemporary interest, such as , Reciprocity with Canada, National Bank Issues, Competition, and similar topics that may arise from r. The preparation and discussion of theses by the an essential feature of this course. Finally, a full sisting of three lectures a week by Professor Dunbar, omic History of Europe and America since the Seven r, opens an attractive field to students of history, elect it without having taken any other course in conomy.

epartment of Semitic Languages, three courses which e especial interest to students of Theology have been om the college list. On the other hand, an advanced Assyrian, by Professor Lyon, and an advanced course by Professor Toy, have been established, so that in se languages, as well as in Hebrew, there is now pro- course of study extending through two years. The ramaic remains on the list, and a half-course on the Inscriptions and the Old Testament, by Professor Lyon, dded.

two courses are provided for Sophomores, one being pecially for candidates for second-year honors. This arrangement that existed before 1882–83, except that courses now has three exercises a week, instead of first course is to be conducted by Professor Croswell,

the second by Professors J. W. White and Dyer. Th
Professor Sophocles, who, owing to failing health, h
able to teach since the beginning of the past year, do
in the list. Professor J. W. White's course on the Lif
cient Athenians is omitted for the present year, but is
next year as a three-hour course. In Latin a new c
conducted by Mr. Preble, is designed especially for
who wish to acquire greater facility in reading. Pro
has substituted a course in the Critical Study of C
course on the Roman Drama; his course for practice
Latin has been consolidated with the second course
tion, which he will now conduct; and his course of
the History and Methods of Classical Study, given
is announced again for this year.

In English, Professor Child's course in Anglo-Sax
enlarged to a three-hour course, but is to be given
years with the course in Early English. In this depa
was placed a course of study not heretofore admitted
for which the degree is given, — Elocution. The cou
to those students only who have already pursued the
voluntary class for a year with marked success, and w
ing to give a considerable amount of time to it. Fo
do not wish to give so much time, voluntary instruc
provided. The work is to consist partly of a study of
ples of elocution, with training in the use of the voi
the study of selections from English classics. The co
ducted by Mr. H. D. Jones, and is rated as a half-cou

In French, the courses heretofore given have embrac
ature of the seventeenth, eighteenth, and nineteent
To supplement these, two new courses have now been
treating of the literature of the fifteenth and sixteent
the other of French literature before the fifteenth ce
two courses are to be given in alternate years b
Bôcher. A third additional course has been est
French and Provençal Philology, to be given by M
alternately with his course in Germanic Philology
Each of the three new courses is to have one exercise
to count as a half-course.

In Philosophy Professor James has substituted for h
tory course two half-courses, one on Psychology, the

y of Evolution. These half-courses have each three exer-
k for a half-year, — a plan which has not been used here-
lective studies, but which has many advantages, and will
e adopted by other instructors. In History a course of
ises a week has been added, to be conducted by Pro-
erton, on the Conflict of Christianity with Paganism to
the Eighth Century; and in Roman Law a new half-
h one exercise a week, on the Law of Property, to be
by Professor Young, will alternate with Professor
ıalf-course on the Law of Inheritance. Professor Nor-
se on Romanesque and Gothic Art has been enlarged to
se of three lectures a week. In Music the instruction
ny has been extended to occupy a full course of three
the Instrumental Music of Haydn, Mozart, Beethoven,
successors, which was last year treated in the former
been made the subject of a separate half-course. In
cs, a new one-hour half-course on the Elements of
, for students who have taken the first course in the
vill be given by Dr. B. O. Peirce, and a second course
ions, with two exercises a week, has been added by
Peirce. In Physics, Professor Trowbridge's course
nservation of Energy has been enlarged to a three-
e, and a new half-course, with two exercises a week,
eory of Probability, with application to the Kinetic
Gases, will be given by Dr. Hall. In Natural History,
Shaler's course in Geology is this year to have two,
three, exercises a week, and to count as a half-

lt of these changes is a list of one hundred and twenty-
es offered for the present year. The number of hours
ion cannot be given accurately. In a few courses, in
nature of the subject suggested a somewhat elastic ar-
, the plan was adopted of appointing two exercises a
a third to be used at the pleasure of the instructor; and
r of hours in laboratory courses cannot be definitely
we allow two hours and a half a week to a course of
class, and three hours to a full laboratory course, —
e undoubtedly below the truth in both cases, — the
nt of instruction offered this year is three hundred
y-three hours a week. The number of hours per week

of instruction in each department, compared with
offered in previous years, is as follows: —

Number of exercises per week in elective courses offered in	1872-73	1873-74	1874-75	1875-76	1876-77	1877-78	1878-79	1879-80	1880-81
Semitic Languages.	3	3	3	3	3	3	4	4	11
Sanskrit and Zend.	3	3	6	3	3	3	6	6	11
Greek	25	22	23	25	23	23	24	26	29
Latin	15	15	15	19	20	18	22	18	22
Greek and Latin. .	..	..	..	3	3	2	2	3	3
English	8	8	5	8	11	14	15	16	16
German	8	8	11	14	17	19	24	25	22
French	14	14	18	12	15	15	15	15	14
Italian and Spanish	11	11	14	17	17	17	19	20	20
Philosophy . . .	12	12	9	9	12	12	18	23*	24
Ethics	3	3	3	3	3	3	3	3	3
Political Economy.	3	3	6	6	6	6	6	9	9
History	17	17	20	20	23	23	25	25*	30
Roman Law . . .	3	..	3	3	3	3	3	4	4
Music	5	8	11	14	11	12	18	13	15
Fine Arts	..	..	6	9	4	6	9	8	6
Mathematics . . .	24	20	24	20	23	24	28	30	26
Physics	12	12	14	15	15	17	22	21	19
Chemistry . . .	11	14	14	14	18	18	21	26	26
Natural History . .	20	23	23	23	25	24	30	42	46
Aggregate . .	197	196	228	240	255	262	308	337	356

While it thus appears that the College offers a la
and greater variety of instruction than ever before, i
have also been enriched in ways that are not shown
enumeration of studies. This has been effected b
methods of instruction which experience has suggest
ticularly by the greater facilities and encourageme
advanced students to do independent work. Many
lar courses are devoted largely or wholly to independe
and the preparation of theses on the part of the st
outside of the regular courses, the opportunities offe
erly qualified students for the investigation and d
special topics, and for the pursuit of private study, w
and guidance of their instructors, are increasing
"Semitic Seminary," with two meetings a month, a
ing for Mathematical discussion once a week, a
announcements of this kind for the present year
structors in Mathematics and in Physics have furthe

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* Elective courses amounting to four hours a week in Philosophy
in History were established in 1878 to take the place of the pres
those subjects, which was abolished at that time. They formed no
in the amount of instruction given.

rses of reading for graduate students in those depart-
announced their readiness to assist such students in
meeting them once a week for explanation and dis-

ber of advanced students who seek these ample oppor-
erhaps as large as could be expected in the present
cation in this country, which demands no training be-
llege course for any but a college teacher, and not even
nost cases; but it is far below what is desirable. The
better trained teachers is surely increasing; but there
remain another serious obstacle to hinder the growth
graduate class, in the poverty of a great number of
vould gladly continue their studies after graduation.
s who have been supported in comfort during their
se, feel that they ought not to draw on the resources
ents or their friends any longer. The fellowships en-
duates are few in number, and in most cases are very
ed for study abroad. The only other form of aid here-
to graduate students has been a limited number of
ts to proctorships. With a view to make such pro-
s in their power for aiding these students, the Faculty,
iously obtained the consent of the Corporation, last
ed two Townsend and two Shattuck scholarships,—
yielding an income of two hundred and fifty, the latter
red and fifty dollars each,—to four candidates for the
tor of Philosophy. For the present year the Faculty
le for a similar purpose four Townsend scholarships,
luable of the few that are not by the terms of their
restricted to the use of undergraduates. The amount
is necessarily small, but it is hoped that it may do
owards keeping here some of our best graduates, or
ither those of other colleges, and that more ample
soon be provided for promoting this most important
thing is now so much needed to strengthen the ad-
rses which have been established, as a vigorous body
students, whose zeal and sympathy would stimulate at
instructors and one another. The presence of such
eover, could not fail to exert a beneficial influence on
by keeping before the eyes of the undergraduates not
ample of earnest work, but also a higher standard

of scholarship than that which makes the first degree
normal goal of an academic course.

CLEMENT L. SMI

NOVEMBER 27, 1883.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I have the honor to submit the following R
state of the Graduate Department for the year 1882–

The practice of forming a separate list of studies
graduates has been abandoned, as I mentioned in my
and one list, comprising all the courses offered by the
except those of a strictly professional character, is n
under the auspices of the College Faculty. The
graduate students in attendance on these courses w
stated in the Report of the Dean of that Faculty.

The Academic Council devoted much time, duri
1882–83, to the consideration of the precise condit
which the degree of A. M. should be given for prof
technical studies, in pursuance of the new provision
the Corporation and Overseers, at the instance of th
Council, in the preceding academic year. The res
deliberations was the adoption of the following rule
numbered 6 and 7 among the *Standing Rules of th
Council:* —

"6. The Academic Council will approve studies pu
Professional and Scientific Schools as constituents
year's course of liberal study to be pursued by candi
degree of Master of Arts; but no study in a Profess
Scientific School will be approved as part of such
course, unless the Council is satisfied that the candi
it has no intention or expectation of counting the sa
wards the degree of Bachelor of Divinity, Bachelo
Doctor of Medicine, Bachelor of Science, or Civil En

"7. The Council will also recommend for the degr
of Arts students, otherwise properly qualified (see
Standing Rules of the Corporation and Overseers
recommended by the appropriate Faculty for the
Bachelor of Divinity, Bachelor of Laws, Doctor o
Bachelor of Science, or Civil Engineer, after the lo

nd residence provided for such degree, and upon ex- passed with high credit. Members of the Schools of aw, Medicine, and Science, who are already Bachelors Harvard University, and who wish to obtain the Mas- simultaneously with their professional degree, should ir applications to the Faculty of the School with which nnected, on or before the 1st of June in the year of nation."

les were put into operation at the close of the academic

persons were admitted to candidacy for the degree of Arts, and the whole number of candidates for that fifteen ; of whom three withdrew, and twelve received This enumeration does not include those who were the degree under Rule 7, above cited.

sons were admitted, or readmitted, to candidacy for of Doctor of Philosophy and Master of Arts, and number of candidates for that degree was thirty-five ; ne has died, six have withdrawn, two have transferred to the list of candidates for the degree of Master of eceived the doctor's degree at the end of the year, and are still candidates for it.

sons were, and still remain, candidates for the degree of Science, all of whom were admitted to candidacy in ears.

owing are the names of persons admitted to degrees, endation of the Academic Council, at Commencement,

A.M.

Frederic Almy, A.B., 1880.
Joseph Austin Coolidge, A.B., 1882.
George Trumbull Hartshorn, A.B., 1882.
Henry Churchill King, A.B. (*Oberlin Coll.*), 1879,
A.M. and D.B. (*Oberlin Sem'y*), 1882.
Philip Coombs Knapp, A.B., 1878, M.D., 1882.
Robert Luce, A.B., 1882.
John Edward Maude, A.B., 1881.
Harry Leverett Nelson, A.B., 1881.
Edward Knights Stevens, A.B., 1882.
Frederic Mather Stone, A.B., 1882.
Duren James Henderson Ward, A.B. (*Hillsdale Coll.*), 1878,
A.M. (*Hillsdale Coll.*).
Horace Leslie Wheeler, A.B., 1881.

Of these, Messrs. King, Knapp, Maude, Nelson
received the degree under Rule 6.

Ph.D. and A.M.

Farley Brewer Goddard, A.B., 1881.

Department, Philology. *Subject*, Greek and Latin. *Thesis*, “S
nensium Capita Antiquaria Historica.”

John Norton Johnson, A.M., 1882.

Department, Philology. *Subject*, Sanskrit. *Thesis*, “The Priests
the Vedic Age.”

William Taggard Piper, A.M., 1881.

Department, Philology. *Subject*, Greek and Latin. *Thesis*, “
minum Romanorum praesertim de Numero Praenominum Prisco.”

Arthur Wellington Roberts, A.B., 1881.

Department, Philology. *Subject*, Greek and Latin. *Thesis*, “De
Graecos.”

Frank William Taussig, A.B., 1879.

Department, Political Science. *Subject*, Political Economy. *The*
to Young Industries as applied in the United States.”

Under Rule 7: —

A.M. with D.B.

James David Callahan, A.B. (*Univ. Mich.*), 1
Charles Elliott St. John, A.B., 1879.

A.M. with LL.B.

Frederick Hobbs Allen, A.B., 1880.
Frank Brewster, A.B., 1879.
Henry Eliot Guild, A.B., 1880.
Thaddeus Davis Kenneson, A.B., 1880.
Leonard Eckstein Opdycke, A.B., 1880.
Samuel Hanson Ordway, A.B. (*Brown Univ.*)
George Pellew, A.B., 1880.
William Schofield, A.B. 1879.

A.M. with M.D.

Franklin Asaph Dunbar, A.B., 1878.
Philip Coombs Knapp, A.B., 1878: *cum laude.*
Edward Winslow Warren, A.B., 1877.
Henry Austin Wood, A.B., 1878: *cum laude.*

The name of Dr. Knapp occurs twice in the above
he was entitled to the degree under Rule 7, and

of an additional year of study devoted to a special

'arker, Kirkland, and Walker Fellowships were held by ›wing persons, during the year 1882–83: —

John Parker Fellowships.

Frank Nelson Cole, A.B., 1882.
Joseph Silas Diller, S.B., 1879.
Edward Emerson Phillips, A.B., 1878, Ph.D., 1880.
George Lincoln Walton, A.B., 1875, M.D., 1880.

John Thornton Kirkland Fellowship.

Paul Shorey, A.B., 1878.

James Walker Fellowship.

Benjamin Rand, A.B., 1879, A.M., 1880.

)iller and Dr. Walton withdrew from their fellowships at se of the academic year, each having completed the full three years. These gentlemen have distinguished themy their thorough and valuable work of study and research lepartments of Geology and of Nervous Diseases respect- Mr. Diller, on his return from Europe, presented to the tee in Natural History, as a candidate for the degree of thesis, which that committee has approved, on "The of the Troad." He defers his examination for the de- a later year. Dr. Walton has published several highly nt papers on the specialty to which he devotes himself.

rs. Cole, Phillips, Shorey, and Rand, having presented tory reports of their progress in their studies, were nted to their respective fellowships for the year 1883–84.

o vacancies remaining in the Parker Fellowships were filled by the appointment of

James Laurence Laughlin, Ph.D., 1876, and
William Patten, S.B., 1883;

Laughlin having withdrawn, on his appointment as Assist- fessor in Political Economy, his fellowship was given to

Harold North Fowler, A.B., 1880.

The Harris Fellowship and the Rogers Scholars
stowed in accordance with recommendations of
Faculty, and are under the supervision of that Fac

All which is respectfully submitted.

JAMES MILLS

To the President of the University:

Sir, — As Dean of the Faculty of Theology, I resp
mit the following Report for the academic year, 1882

Twenty-nine students were connected with the Sc
the year, namely: —

Resident Graduates . . . .
Senior Class. . . . .
Middle Class . . . .
Junior Class . . . .
Special Students . . . .

Of these, one resident graduate and one special
mained in the School but a short time.

The nature and amount of the instruction given ma
from the accompanying table, pp. 84, 85.

Several courses were attended by undergraduates of
These are reckoned together with the students of tl
the numbers which, in the table just referred to, re
attendance at each course. The courses thus attende
graduates, and the number of undergraduates atte
respectively, are as follows: —

Junior Hebrew . . . .
Philosophy of Religion . . . .
History of the Reformation . . . .
Ethics . . . .
Quotations from the Old Testament . . . . .

Some of the professors of the School gave other co
are not referred to in the table, either because they do
strictly to the Theological course, or because no divin
attended them. Professor Toy gave lessons in the
guage, and Professor Lyon in the Assyrian, each two h
Each of these courses was attended by one divinity

others not connected with the School. Professor
ave a course on "Practice in the Study and Use of
Sources;" two hours a week. This was attended by
raduates and one candidate for the degree of Doctor
hy.

se last mentioned, the courses on Aramaic, on the
s from the Old Testament in the New," and those on
n and Arabic languages, were announced as optional;
ter being foreign to the specific work of the School,
being regarded as less essential to it than the studies
quired. This distinction was, however, looked upon
and temporary.

he courses that formed the regular work of the School,
shorter courses were given during the year. One of
ted of eight lectures by George T. Ladd, D.D., of Yale
the Inspiration of the Bible. These were fully at-
students of the School, and by persons unconnected
were listened to with great interest.
course was given by gentlemen connected with the
but not teachers of the School. In this course lec-
given as follows: —

cation of the Ministry: President C. W. Eliot.
eaching: Professor A. P. Peabody.
the Pulpit: Professor A. S. Hill.
ion of a Library in a Community of Professional Students:
or, *Librarian.*
ny: Professor G. L. Goodale.
lary Line between Science and Religion: Professor Trow-

al Exercise suitable to a Minister's Life: Professor D. A.

tures were given in the chapel of the School, which
se was well filled and sometimes crowded. They
nly important in themselves, but were interesting as
e help which the School may receive from persons
other departments of study. Each lecturer spoke
his own standpoint, and thus threw fresh light upon
onsidered.
res by Professor Lyon on Assyrian antiquities with
the illustration of the Old Testament were also

Instructor.	Subjects and Methods of Study.	Number of Students.	Exercises per Week.
	JUNIOR CLASS.		
Prof. Abbot.	Textual Criticism of the New Testament; Exegesis of the Gospel of Matthew (with comparison of the other Gospels), chapters i.–viii. Lectures and Recitations. Dissertations by students.	7	2
Prof. Peabody.	The Structure and Analysis of Sermons.	5	1
Prof. Peabody.	The Philosophy of Religion. Caird's Philosophy of Religion. Schleiermacher's Reden über die Religion. Lectures.	11	1
Prof. Emerton.	The Conflict of Christianity with Paganism to about A.D. 800.	6	2
Prof. Lyon.	Hebrew Inflections (Davidson's grammar), with reading from the Pentateuch and Psalms, and occasional Exegesis. Written renderings of Hebrew into English, and of English into Hebrew. Brief Lectures on the Ethics of the Old Testament.	5	3
Prof. Lyon.	Lectures on Assyrian Antiquities, with special reference to the illustration of the Old Testament.	4	1
Mr. Jones.	Elocution. Class exercises.		
	MIDDLE CLASS.		
Prof. Abbot.	Exegesis of the Gospel of Matthew, chapters xiv.–xxviii. Critical Introduction to the Gospel of John, and Exegesis of chapter i.	7	2
Prof. Everett.	Studies in the Comparative History of Religions (particularly the Vedic, the later Brahmanic, the Buddhist, the Mazdean, and the Chinese).	8	2
Prof. Everett	Systematic Theology begun; The Psychological Basis of Religious Faith	6	1

Mr. Jones.	Elocution. Class exercises as above.		

SENIOR CLASS.

Prof. Abbot.	Exegesis of the Gospel of John, chapters v.–xxi.; Critical Introduction to the Epistle to the Romans, and Exegesis.	8	2
Prof. Everett.	Systematic Theology continued; The Content of Christian Faith.	10	3
Prof. Toy.	Lectures on the Criticism of the Pentateuch. Theology of the Old Testament. (Schultz's Alttestamentliche Theologie).	8	1
Prof. Toy.	Lectures on the Quotations from the Old Testament in the New Testament.	6	2
Prof. Peabody.	Homiletics, as above, in connection with the Middle Class.		
Prof. Peabody.	Liturgics; The History of Worship.	7	1
Prof. Peabody.	Pastoral Care and the Conduct of Public Worship. Twelve Lectures.	11	
Prof. Emerton.	History of the Protestant Reformation and the Roman Catholic Reaction (with the Middle Class, as above).		
Mr. Jones.	Elocution. Private instruction. Each student thirty minutes per week.		

GENERAL EXERCISES.

Preaching by a student, once a week, in the Chapel of the School, open to the public.
Extempore speaking; each speaker being criticised in the presence of the School. Once in two weeks.
Conference meetings, conducted by students, once in two weeks (alternating with the above).
Morning prayers, conducted by teachers and students.

largely attended by persons not connected with the S
number of attendants given in the table refers m
students who made it a regular part of their studi
mitted to an examination upon it.

I have in a former Report called attention to the
special students of the School represent two distin
scholars. Under the same name are enrolled men
pass the required examinations for entering as candi
degree of Bachelor of Divinity, and men of high
who are drawn to the School for some special cour
The fact that the degree of Master of Arts is now g
dents otherwise properly qualified for a year of theo
will probably tend to increase the number of this
Two special students already bachelors of arts, rec
last Commencement the degree of Master of Arts.

The most important question which the Faculty ha
upon to decide during the year is that of allowing
a certain amount of choice in the studies that shall
them for the degree of Bachelor of Divinity. The
not drawn to the consideration of this question by
theoretic interest, although it might well deserve
as a matter of fundamental importance in the th
logical education. The question was forced upon the
tical necessity. It was found that owing to the inc
teaching force of the School, and to the ability a
of some teachers to offer more lectures than could
expected of them, more hours of class-work were
could reasonably be required of students. While thirt
were offered, it was thought that thirty hours were
should be required for the degree. These would gi
dent an average of ten hours a week for three years.
more hours then could be taken by any student wi
too severely his power of study. The work of a
student, however, is very imperfectly done, unless
is left for independent study, beyond that absolut
by his class exercises. In fixing the number of hou
be insisted upon, enough should be required to ins
use of the time, and to furnish evidence that the deg
been given for inadequate work; and not so many a
student no freedom for that thought and research
contribute so much to his mental growth.

If out of thirty-nine hours of class-work only thirty shall be required, it becomes an important question what disposition shall be made of the rest. Two courses are open. One is to name certain hours that shall be required, and to leave the rest optional. This was done provisionally in reference to the studies of the last year. This course does, however, injustice both to the studies marked optional and to the degree itself. It does injustice to the studies marked optional, not merely by the appearance of underrating their importance, but especially through the fact that if the student is pressed for time these will be the studies that must suffer. It does injustice to the degree, by excluding from the studies that will be accepted for it those that mark a special degree of attainment in certain directions. There are good reasons, for instance, why Aramaic should not be required; there are none why it should not be accepted for the degree. The degree that may be given for the amount of Hebrew ordinarily studied, and not for an extension of this line of work into the Aramaic, seems marked by this fact as a degree to be given for elementary rather than for advanced study. All the courses marked optional would naturally belong to this class; that is, they would naturally be of a kind to indicate special advance in certain directions, and thus a marked excellence in some lines of study. Certainly the requirements for the degree should be elastic enough to meet these conditions.

If election is to be allowed, a further question is whether it shall be absolute within the limits of the courses offered; or narrowed by the designation of one or more studies that shall be required, while freedom of choice shall extend to all the rest. In regard to this, it may be stated that there was a wide difference of opinion in the Faculty. This difference was both in regard to the advantage of requiring any studies in particular, and, among those who favored such requirement, in regard to the studies which should be marked as essential.

The result was that no studies were designated as specially to be required. Students are to be allowed to select the courses that they will offer for the degree. Such selection is, however, to be submitted to the Faculty for approval. The only rule that the Faculty laid down for its own guidance in the matter, is that no one of the fundamental departments of theological study should be neglected.

The choice thus granted is too small to be dignified by the name of an elective system. It is enough, however, to be of real advantage to students. The studies required for preparation for the ministry are of a different nature from those required by any other profession. There is little that is technical. The studies are more of the nature of those which belong to the college. They all open possibilities much greater than any student can accomplish. The line drawn in any case is to a great extent arbitrary. There can be no reason, then, why the student may not be allowed to draw it to some extent for himself. He can thus follow his own tastes, and gain more real good than if he were compelled to follow a prescribed routine. Thus, so far as this liberty extends, it may be expected to produce the same kind of beneficial effects that have resulted from the introduction of the elective system into the College. It will be noticed that the rule which the Faculty has laid down for itself is very vague. This vagueness was intentional. The movement is in some degree an experiment. As the matter stands, the Faculty is left free to adapt its action to the needs that may arise. The rule will, however, doubtless be interpreted in a liberal manner.

Another advantage of the change that has thus been made is, that the student will be able to select his own methods of work, and to group the studies of any one year in such a way as may seem to him best. There is indeed a possible logical order in the studies that make up the course in Theology. This, however, cannot be carried out strictly; and the schools that have done most in this direction have made only an approach to a true logical order. Where this has been done most thoroughly, one great inconvenience has been felt. To many students, work very largely in one direction for a whole year has proved monotonous. Especially has this been found true of the year spent in exegetical study. The habit of the Harvard School has been, for the most part, to make no attempt at logical order of study. All the fundamental branches of study have been carried on through the three years. Of late the attempt has been made to bring the study of Systematic Theology, so far as possible, into the last year. In other respects, studies have been carried on side by side as before. In fact, different students need different methods. Some work best if their labor can be concentrated on a single department. Others need various degrees of variety in their work. As the matter now stands, the opportunity is given to each student to adopt such a method as he may prefer. At the same time the Faculty is relieved of the difficult task of dividing the studies into three equal parts, corresponding to the three years of the course. The studies will henceforth be arranged according to departments, and not according to years.

The change thus described marks the completion of a movement in the direction of a larger liberty, that has been going on in the School for the last few years: first, the habit of marking absences from lectures was given up; next, a similar freedom was established in regard to attendance at morning prayers. A person looking at the School merely from the outside would not suspect that any change had been made. Absence from lectures is very rare, and the attendance at chapel is as good as when the monitor was present. The liberty now granted in regard to the choice of studies, and of method in study, will doubtless bring as little disorder into the work of the School as the changes above referred to.

The School is to be congratulated on the fact that Joseph Henry Thayer, D.D., has accepted a position in the School as lecturer on Biblical Theology. His course will extend through the year, and will be reckoned among the studies that will be accepted for the degree of Bachelor of Divinity.

During the last two years Divinity Hall has been very much improved. Summer before last, the chapel was refurnished and decorated, and is now a pleasant and attractive place, wholly suited to its purpose. The last summer other parts of the Hall have been improved. The entries have been made much lighter, both by day and evening, and seem thereby to have been made broader; the vestibules have been enlarged and other important changes made. The field at the north of the building has been levelled. This not only improves the appearance of the locality, but will in time furnish a very convenient place for out-of-door sports.

The Library has been well cared for the past year by A. A. Brooks, A.B., the Librarian. Seventy-three volumes have been added to the Library during the year, of which forty-three were gifts. The card-catalogue has increased slowly. A larger force needs to be employed in the work of cataloguing, as it is a very serious as well as important undertaking.

The recent decision of the Supreme Court in regard to the

Williams Fund is a very fortunate one for the School. It not only secures the fund to the purpose for which it was designed, but allows the society having it in charge to use any surplus that may accrue, for the general interests of the School. Much good may be expected from this source.

C. C. EVERETT, *Dean.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I beg to submit the following Report upon the Law School for the academic year 1882–83: —

The table on pp. 92, 93 gives the courses of study and instruction during the year, the names of the instructors, the text-books used, the number of exercises per week in each course, and the number of students who offered themselves for examination in each course at the end of the year.

The following table exhibits the attendance at the School during the last twelve years: —

	1870–71.	1871–72.	1872–73.	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.
Whole no. of students in the School	165	138	117	141	144	173	199	196	169	177	161	161	138
Number that were in the School during the whole year	107	107	109	121	130	153	168	172	137	138	136	139	120
Number that were in the School only part of the year	58	31	8	20	14	20	81	24	32	89	25	22	18
Average number	136	123	113	131	137	163	184	183	154	157	149	146	129

The following table exhibits the School as divided into classes since the establishment of the three-years' course and the examination for admission: —

	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.
First Year	72	63	78	57	61	59
Second Year . . .	79	50	32	58	41	38
Third Year. . . .	—	—	21	14	25	20
Special Students. .	31	47	46	82	34	21

In regard to the foregoing table it is to be observed that, although the three-years' course went into operation at the beginning of 1877–78, there was no third-year class until 1879–80. It is also to be observed that the second-year class of 1877–78 did not take the three-years' course, but was graduated at the end of the second year, that class having entered the School before the three-years' course went into operation.

The following table exhibits the results of the examinations for admission in each year since they were established: —

	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.
Offered . .	16	15	18	25	19	12
Admitted .	7	7	12	13	16	10

The following table exhibits the results of the examinations for a degree in each year since the establishment of the three-years' course: —

	1877-78.			1878-79.			1879-80.			1880-81.			1881-82.			1882-83.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year . .	66	51	15	50	42	8	73	69	4	45	43	2	49	44	5	46	44	2
Second Year .	66	47	19	40	39	1	28	26	2	49	46	3	38	37	1	36	34	2
Third Year . .							22	18	4	18	18	0	36	33	3	21	19	2

In regard to the foregoing table, it is to be observed that it includes no special students, and hence that all the applicants included in it were either graduates of colleges or had passed the examination for admission. Of course this remark does not apply to the second-year class of 1877–78, and this accounts in part for the much greater number of failures in that class.

The following table exhibits the number of students who, since the establishment of the three-years' course, have been examined

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
	FIRST YEAR.		
Prof. Gray.	Real Property. No text-book.	2	54
Prof. Langdell.	Contracts. Langdell's Cases on Contracts.	3	50
Prof. Holmes. Prof. Ames.	Torts. Ames's Cases on Torts.	2	49
Mr. Fessenden.	Criminal Law and Criminal Procedure. No text-book.	2 *	46
Prof. Ames.	Civil Procedure at Common Law. Ames's Cases on Pleading.	2 †	45
	SECOND YEAR.		
	HONOR COURSE.		
	Required Subjects.		
Mr. Brandeis.	Evidence. No text-book.	2	32
Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading.	2	32
Prof. Gray.	Property. No text-book.	2	32
Prof. Ames.	Trusts. Ames's Cases on Trusts.	2	32
	Elective Subjects.		
Mr. Barnes.	Sales of Personal Property. Langdell's Cases on Sales.	2	19
Prof. Ames.	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.	2	12
	ORDINARY COURSE.		
	Elective Subjects.		
Mr. Brandeis.	Evidence. No text-book.	2	8
Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading.	2	3
Prof. Gray.	Property. No text-book.	2	7
Prof. Ames.	Trusts. Ames's Cases on Trusts.	2	4
Mr. Barnes.	Sales of Personal Property. Langdell's Cases on Sales.	2	6
Prof. Ames.	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.	2	3

	THIRD YEAR.		
	HONOR COURSE.		
	Required Subjects.		
Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction.	2	11
Prof. Ames.	Partnership and Corporations. Ames's Cases on Partnership.	2	11
Prof. Holmes. Prof. Langdell.	Suretyship and Mortgage. No text-book.	1	11
	Elective Subjects.		
Prof. Gray.	Conflict of Laws. No text-book.	1 *	1
Mr. Adams.	Constitutional Law. No text-book.	1 †	1
Prof. Holmes. Prof. Gray.	Agency and Carriers. No text-book.	1	8
Prof. Gray.	Wills and Administration. No text-book.	1	5
Prof. Gray.	Law of Persons. No text-book.	1	5
Prof. Holmes.	Jurisprudence. No text-book.	1 *	0
Prof. Ames.	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.	2	8
Mr. Barnes.	Sales of Personal Property.	2	5
	ORDINARY COURSE.		
	Elective Subjects.		
Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction.	2	7
Prof. Ames.	Partnership and Corporations. Ames's Cases on Partnership.	2	11
Prof. Gray.	Conflict of Laws. No text-book.	1 *	2
Mr. Adams.	Constitutional Law. No text-book.	1 †	2
Prof. Holmes. Prof. Gray.	Agency and Carriers. No text-book.	1	8
Prof. Gray.	Wills and Administration. No text-book.	1	10
Prof. Gray.	Law of Persons. No text-book.	1	3
Prof. Holmes. Prof. Langdell.	Suretyship and Mortgage. No text-book.	1	2
Prof. Holmes.	Jurisprudence. No text-book.	1 *	0
Prof. Ames.	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.	2	9
Mr. Barnes.	Sales of Personal Property. Langdell's Cases on Sales.	2	7

* For the first half of the year.

† For the last half of the year.

for a degree in the studies of any year without having been members of the School during that year: —

	1877-78.			1878-79.			1879-80.			1880-81.			1881-82.			1882-83.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year . .	5	2	3	3	2	1	6	4	2	6	4	2	2	1	1	3	3	0
Second Year .							1	1	0									
Third Year .							5	4	1	4	4	0	10	8	2	3	2	1

The following table exhibits the results of the examinations for the honor degree in each year since it was established: —

	1878-79.			1879-80.			1880-81.			1881-82.			1882-83.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
Second Year.	26	12	14	17	7	10	39	16	23	27	11	16	32	11	21
Third Year .				9	7	2	5	3	2	13	10	3	11	10	1

The following table exhibits the number of students who have entered the School in each year during the last twelve years, and shows how many of them were graduates of colleges, and of the latter, how many were graduates of Harvard and how many of other colleges: —

	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.
Whole number of entries .	105	92	87	95	102	119	128	111	102	124	91	97	84
Graduates of colleges . .	60	56	47	58	55	67	77	79	62	76	60	53	56
Harvard graduates . . .	19	26	22	29	40	39	47	47	38	59	41	29	33
Graduates of other colleges.	41	30	25	29	15	28	30	32	24	17	19	24	23
Non-graduates	45	36	40	37	47	52	51	32	40	48	31	44	28

At the close of the year 1882-83 an event took place which is likely to exert a great and lasting influence upon the prosperity of the Law School; namely, its removal from Dane Hall to Austin Hall. One year ago no department of the University —

at all events, no one of those situated in Cambridge — was so badly housed as the Law School; and that circumstance doubtless had its influence in diminishing the prosperity of the School. Now, thanks to the munificence of Mr. Austin, the School has its home in a building which, in its provisions for material comfort, need not fear comparison with any other, and which, in architectural beauty and adornment, excels all others belonging to the University.

C. C. LANGDELL, *Dean*.

AUSTIN HALL, Nov. 30, 1883.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — As Dean of the Medical Faculty, I submit the following Report upon the Medical School for the academic year 1882–83: —

The whole number of students in attendance during the year was two hundred and forty; during the first term two hundred and thirty-four; during the second term two hundred and nineteen. Of these, one hundred and sixteen had a literary or scientific degree. There were eighty-five applicants for the degree of Doctor of Medicine, of whom nine were rejected. Seventy received the degree of M.D. after a three years' course of study; six received the degree of M.D. after a four years' course; of these six, four received in addition the degree of A.M., two of these *cum laude*. The Fourth Class was composed of ten students, four of whom postponed graduation in order to become candidates for hospital appointments. One of the Barringer Scholarships was awarded to Ashbury Gilbert Smith of the fourth class. The Faculty Scholarships were awarded to Oscar Joseph Pfeiffer and Leonard Wood of the third class, and to Owen Colburn and Willis Willard Copp of the second class. The Bright Scholarship was awarded to Charles Wendell Townsend of the second class.

The table on pages 96–98 shows the amount and character of the instruction given.

The results of the examinations for admission to the School are given in the following table: —

			Physics.	Latin.	English.	Elective.	Rejected.
1883.	June	Offered	25	25	25	25	3
		Conditioned	8	8	4	3	
	Sept.	Offered	18	18	18	18	1
		Conditioned	2	9	4	2	

COURSES OF INSTRUCTION FOR 1882–83.

Instructors.	Subjects.	Exercises per Week.	No. of students examined.
	FIRST CLASS.		
Prof. Holmes and Dr. Dwight	Descriptive Anatomy	Four till May.	71
Drs. M. H. Richardson, Otis, and Mixter	Practical Anatomy, with Exercises in Dissection	Fifteen, January till May.	
Drs. Whitney and Quincy	Laboratory Exercises in Histology	Two till May.	
Dr. C. S. Minot	Embryology	Twelve Lectures.	
Prof. Bowditch	Systematic and Experimental Physiology	Four.	74
Dr. J. W. Warren	Laboratory Exercises in Experimental Physiology	November till May.	
Dr. Hills	General and Analytical Chemistry	Two, with ten additional exercises.	60
Dr. Hills	Practical Exercises in the Laboratory for General Chemistry	Six.	
	SECOND CLASS.		
Dr. Dwight	Topographical Anatomy	One.	75
Drs. M. H. Richardson, Otis, and Mixter	Practical Anatomy, with Exercises in Dissection	Five till May.	
Prof. Wood	Medical and Toxicological Chemistry	Two.	69
Prof. Wood and Dr. Emerson	Practical Exercises in the Laboratory for Medical Chemistry	Six.	
Dr. Bolles	Materia Medica, with Practical Demonstrations	One.	75
Prof. Fitz	General Pathology and Pathological Anatomy	Two.	73
Prof. Fitz	Special Pathological Anatomy, with Demonstrations	Two.	
Drs. Whitney and Gannett	Laboratory Exercises in Pathological Histology	Two till April.	
Prof. Fitz and Dr. Gannett	Practical Instruction in performing Autopsies	Throughout the year.	
Profs. Minot and Edes	Clinical Medicine	Four.	
Drs. Mason, Shattuck, and Garland	Practical Instruction in Auscultation and Percussion	Six first half-year.	
Asst. Prof. Knight	Practical Diagnosis and Treatment of Diseases of the Larynx	Six first half-year.	
Asst. Prof. Warren	Recitations in Surgical Pathology	One first half-year.	
Asst. Prof. Warren	Recitations in Surgery	One second half-year.	

SECOND CLASS — CONTINUED.

Asst. Prof. Warren	The Application of Bandages and Apparatus	One second half-year.	
Drs. Whitney and Gannett	Laboratory Exercises in Surgical Histology	Two after March.	
Asst. Prof. Porter	Clinical Surgery	Two first half half-year.	
Prof. Cheever	Clinical Surgery	Two till April.	
Asst. Prof. Porter	Clinical Surgery	Two second half-year.	

THIRD CLASS.

Prof. Edes	Therapeutics	Three.	
Prof. Reynolds	Theory and Practice of Obstetrics	Three.	78
Asst. Prof. W. L. Richardson	Recitations in the Theory and Practice of Obstetrics	One.	65
Asst. Prof. W. L. Richardson	Operative Obstetrics	Twelve practical exercises.	
Asst. Prof. W. L. Richardson	Practical Instruction in Clinical Obstetrics	Throughout the year.	
Prof. Minot and Dr. Whittier	Theory and Practice of Physic	Five.	
Profs. Minot and Edes	Clinical Medicine	Four.	65
Prof. Cheever	Surgery and Clinical Surgery	Two first half-year.	60
Prof. Cheever	Clinical Surgery	Two till April.	62
Asst. Prof. Porter	Surgical Anatomy and Operative Surgery	Fifteen practical exercises.	61
Asst. Prof. Porter and Dr. Otis	Operative Surgery	One.	
Prof. Williams	Diseases of the Eye	One.	
Prof. Williams	Clinical Ophthalmology	One till January and after March.	
Prof. White	Diseases of the Skin	One.	
Prof. White	Clinical Dermatology	One.	
Asst. Prof. Baker	Gynaecology	Two.	
Asst. Prof. Baker	Clinical Gynaecology	Two second half-year	
Dr. Davenport	Clinical Gynaecology	Two first half-year.	
Dr. Greenough	Practical Diagnosis and Treatment of Syphilis	One.	
Dr. Green	Pracical Diagnosis and Treatment of Diseases of the Ear	One, January till April.	
Dr. Blake	Anatomy, Physiology, and Diseases of the Ear	Two for three months.	
Dr. Oliver	Practical Diagnosis and Treatment of Diseases of Children	One first half-year.	
Dr. Rotch	Practical Diagnosis and Treatment of Diseases of Children	One for six months.	
Dr. Webber	Practical Diagnosis and Treatment of Diseases of the Nervous System	One till February.	

COURSES OF INSTRUCTION FOR 1882–83 — CONTINUED.

Dr. Putnam	Practical Diagnosis and Treatment of Diseases of the Nervous System	One.	
Dr. Folsom	Mental Diseases	Eight Lectures.	
Dr. Draper	Forensic Medicine, with Demonstrations	Twelve Exercises.	
	FOURTH CLASS.		
Dr. Draper	Clinical Medicine	One.	
Dr. Garland	Clinical Medicine	One.	
Dr. Mason	Clinical Medicine	One for three months.	
Asst. Prof. Warren	Clinical Surgery	One, three and a half months.	
Asst. Prof. Porter	Clinical Surgery	One after February.	
Asst. Prof. Porter and Dr. Otis	Operative Surgery	Practical Exercises.	9
Dr. Bradford	Orthopedic Surgery	Two in November and December.	
Prof. Reynolds	Obstetrics	One.	
Asst. Prof. W. L. Richardson	Clinical Obstetrics	Two for six months.	5
Asst. Prof. W. L. Richardson	Operative Obstetrics	Practical Exercises.	
Prof. Williams	Clinical Ophthalmology	Two for six months.	4
Dr. Wadsworth	Ophthalmoscopy	One for four months.	
Prof. White	Dermatology	One.	3
Prof. White	Clinical Dermatology	Three.	
Asst. Prof. Baker and Dr. Davenport	Clinical and Operative Gynaecology	Six.	5
Dr. Chadwick	Clinical Gynaecology	Three.	
Drs. Oliver and Rotch	Diseases of Children	Three.	5
Drs. Webber and Putnam	Diseases of the Nervous System	Two.	3
Asst. Prof. Folsom	Mental Diseases	One.	3
Dr. Knight	Laryngology	Three for two months.	5
Dr. Blake	Otology	Two for three months.	5
Dr. Green	Otology	Two for three months.	
Dr. Draper	Forensic Medicine	One.	4
Dr. Harris	Forensic Medicine	Demonstrations.	
Dr. Greenough	Syphilis	Two.	5
Dr. Homans	Ovarian Tumors	Six lectures; Clinical Exercises.	
Boston Cooking School	Cookery	Six Exercises.	

JUNE EXAMINATIONS. — STATISTICS OF REJECTION.

		FIRST CLASS.						SECOND CLASS.								THIRD CLASS.											
		Anatomy.		Physiology.		General Chemistry.		Medical Chemistry.		Materia Medica.		Path. Anatomy.		Topo. Anatomy.		Theory and Practice.		Clinical Medicine.		Surgery.		Clinical Surgery.		Therapeutics.		Obstetrics.	
			Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
1880	Passed	77		81		52		46		70		62				58		53		65		59		56		56	
	Rejected	15	16	27	25	15	22	11	19	13	15	11	15			9	13	10	15	1	1	11	15	13	18	9	13
	Total	92		108		67		57		83		73				67		63		66		70		69		65	
1881	Passed	58		42		37		70		69		77				74		67		73		77		82		66	
	Rejected	8	12	19	31	10	21	9	11	15	17	11	12			5	6	16	19	3	3	1	1	8	8	14	17
	Total	66		61		47		79		84		88				79		83		76		78		90		80	
1882	Passed	60		62		38		64		46		54		52		74		82		82		80		64		69	
	Rejected	10	14	13	17	10	20	7	9	15	24	11	16	3	5	9	10	5	5	2	2	3	3	5	7	15	17
	Total	70		75		48		71		61		65		55		83		87		84		83		69		84	
1883	Passed	63		62		53		62		64		62		69		60		58		57		61		69		59	
	Rejected	8	11	12	16	7	12	7	10	11	15	11	15	6	8	5	8	2	3	5	8	0	0	9	11	6	9
	Total	71		74		60		69		75		73		75		65		60		62		61		78		65	

FOURTH CLASS.

		Ophthalmology.		Dermatology.		Gynaecology.		Obstetrics.		Clinical & Operative Obs.		Diseases of Children.		Diseases of Nervous System.		Mental Diseases.		Forensic Medicine.		Otology.		Laryngology.		Syphilis.		Operative Surgery.	
1881	Passed	9		7		8				7		9		9		9		9		8		9		9		9	
	Rejected	0	0	2	22	1	11			2	22	0	0	0	0	0	0	0	0	1	11	0	0	0	0	0	0
	Total	9		9		9				9		9		9		9		9		9		9		9		9	
1882	Passed	7		7		7		6		6		7		6		6		7		8		7		7		8	
	Rejected	1	12	0	0	0	0	1	14	1	14	0	0	1	14	1	14	0	0	0	0	0	0	0	0	0	0
	Total	8		7		7		7		7		7		7		7		7		8		7		7		8	
1883	Passed	4		4		5				5		5		8		3		4		5		5		5		9	
	Rejected	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	4		4		5				5		5		3		3		4		5		5		5		9	

The table on page 99 gives a statement of the rejections at the annual examinations in June for four years past.

The following table shows the increasing recognition of the value of the opportunities offered by the School for obtaining a medical education: —

NUMBER OF TERMS SPENT AT THE SCHOOL BY GRADUATES.

	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.
Spent six terms	22	14 47%	25 69%	40 65%	41 85%	62 88%	39 86%	49 81%	79 91%	67 88%
Spent five terms	2	7	5 1%	9	4	2 2%	1 2%	6 10%	2 2%	4 5%
Spent four terms	6	6	4 11%	8	8	3 4%	4 8%	4 6%	4 4%	4 5%
Spent three terms	5	0	2 5%	1	0	2 2%	0	1 1%	0	1 1%
Spent two terms	3	3 10%	0	3	0	1 1%	1 2%	0	1 1%	0
Total graduated	38	30	36	61	48	70	45	60	86*	76†

* Includes nine students of the Fourth Class.

† Includes six students of the Fourth Class.

The most important event of the year in the history of the School is the retirement of Dr. O. W. Holmes from the Professorship of Anatomy, which he has held since 1847. Although the withdrawal of this gifted teacher, as well as that of Dr. Bigelow in the preceding year, must of course be felt as a serious loss by the School to which they have so long given their valued services, yet the work which they have laid down has been taken up by able and willing hands, and it is believed that the instruction in Anatomy and Surgery, though it may perhaps lack some of the peculiar brilliancy and charm imparted to it by these distinguished professors, still fully sets forth the present state of our knowledge in these important branches.

A fire which occurred in the New Building of the Medical School on Boylston Street during the course of its construction, so far delayed our occupation of it that the whole work of the School in the past year was carried on in our old quarters in North Grove Street.

H. P. BOWDITCH, *Dean.*

To the President of the University:

Sir, — As Dean of the Dental Faculty I beg leave to submit my Report for the year 1882–83: —

The number of students was twenty-six, — thirteen of the first year, six of the second, and seven of the third.

The students of the first year, as usual, attended the medical lectures of this year in connection with the medical students, and passed with them the examinations. Five failed to pass these examinations, of whom three failed utterly in all three subjects, one in two subjects, and one in one. Those who fail to pass in two of the three are not permitted to go on with the class, but must take the year's work again. They can, however, try again at the September Examinations. One did so, and succeeded in passing. The studies for the year were General Anatomy, including dissections, Physiology, and General Chemistry.

Twelve lectures in Surgical Pathology and three in Surgery are required of the second-year students, which are also had in connection with the medical students. One only failed to pass the examination.

The School has this year been without a Professor of Operative Dentistry, the place vacated by Professor Shepard at the expiration of the previous year not having been filled. The duties have been performed by the Dean, in addition to those of his own professorship, by delivering eighteen lectures of about an hour and a half each on the subjects appertaining to this branch. He has been ably assisted in the clinical instruction by the five clinical instructors and the Demonstrator, who have faithfully and conscientiously performed the duties of their offices. This body was organized with a chairman as a board of instruction at the beginning of the year, the Dean being a member *ex officio*, and met once a month for consultation and comparison of notes, thus keeping the progress and standing of each student in view of the whole body throughout the year. This plan has worked so well that it is proposed to continue it. The out-patients department of the Massachusetts General Hospital has been used for the purposes of this department, and at no time has there been a lack of patients. In March operations were begun upon the foundations of the new out-patients department, and a portion of the outer wall was removed, exposing both instructors and patients to the inclemency of an exceptionally inclement spring. Notwithstanding, work was continued at great disadvantage until, some three weeks before the end of the term, complete cessation of work was enforced. At no time in the history of the School have so many untoward circumstances combined to hinder the work of instruction; yet such has been the devotion of the instructors that the full amount of work was accomplished.

The Demonstrator, with one of the instructors, has been in attendance on every School afternoon throughout the year to superintend the operations which are all performed by the students, and give advice and assistance whenever either was necessary.

The Professor of Mechanical Dentistry has given nineteen lectures of about an hour and a half each, alternating with lectures on Operative Dentistry, previously referred to, on the subjects pertaining to his department. He has also been present in the Laboratory for Clinical Instruction about one hour of each week during the term. The Demonstrator has also been present every School morning of the year for instruction. Patients have at no time been wanting to give the students abundant opportunities for practising every branch of this specialty.

Drs. Pond and Grant, Demonstrators respectively of Operative and Mechanical Dentistry, have performed the duties of their offices with exemplary fidelity and success.

Dr. Brackett, Assistant-Instructor in Dental Therapeutics, has given thirty hours' of instruction in his course, including the daily "quizzes" on preceding lectures, with which it has always been his custom to begin the hour. He is satisfied that this course adds greatly to the efficiency of the instruction by serving to call attention to and fix points that would otherwise inevitably be lost.

The Instructor in Oral Surgery and Pathology, Dr. J. W. Warren, has lectured one hour each week until within a few weeks of the end of the term, which were employed in the preparation and examination of specimens for the microscope.

The number of students who came up for the degree was thirteen, of whom five failed to pass.

It seems useless at this time to make any allusion to the pecuniary needs of the school, inasmuch as previous pressing appeals have produced no result. These needs are just now more pressing than ever.

In the fifteen years of the School's existence, hardly a dollar has been given to aid its advancement, except what the alumni, all young men struggling with the beginnings of their chosen profession, have wrung from their own necessities to encourage and sustain a cause in which they believe. It can be of no direct advantage to these young men to build up a School which is turning out rivals for their practice; but the elevation of their profession to a higher plane, the placing it on a level with its sister professions, so that in honoring it they themselves may be honored, is the impelling motive. A similar motive should also influence the community whom they serve; for the better the education of the members of a profession, the better the service they can render. Therefore, it would seem that the public-spirited and the charitable givers should turn at least a small rivulet from the great stream of public benefaction in our direction.

THOMAS H. CHANDLER, *Dean.*

To the President of the University:

Sir, — I have the honor to submit the following report upon the Lawrence Scientific School for the Academic year 1882–83: —

The number of students registered during the year was twenty-five. They were classified as follows: —

I.	Engineering	6
II.	Chemistry	1
III.	Natural History	6
IV.	Mathematics	1
	Special Courses	11
	Total	25

These students attended the exercises of thirty-nine different instructors. The whole number of courses taken, prescribed and elective, was one hundred and fourteen, an average of about four and a half to each pupil. The distribution of studies is shown by the following statement: —

Astronomy	1	Mechanics	2
Botany	4	Mechanical Drawing	7
Chemistry	19	Music	1
English	3	Philosophy	2
Fine Arts	4	Political Economy	1
French	6	Physics	8
Geology	11	Rhetoric	1
German	9	Surveying	5
Greek	2	Themes	2
History	7	Theology	1
Lithology	1	Zoölogy	7
Mathematics	10		

Five persons received the degree of S. B. at Commencement, — four in Natural History, and one in Mathematics.

H. L. EUSTIS, *Dean.*

To the President of the University:

Sir, — I respectfully submit the following Report upon the Bussey Institution for the year 1882–83: —

The usual number of students, eight, attended the various courses, and one student received the degree of Bachelor of Agricultural Science at Commencement. Instruction in Agriculture was given by Mr. Motley; in Applied Zoölogy at first by Mr. Ford and afterward by Professor Lyman, of the Veterinary School, assisted by the Bussey Demonstrator in Zoölogy, Mr. Hinckley; in Horticulture by Mr. Watson; in Botany by Mr. Faxon; in Entomology by Mr. Burgess; and in Agricultural Chemistry by Professor Storer. A brief interruption of the course in Applied Zoölogy, caused by the resignation of Professor Slade and the death of his assistant Mr. Ford, was met by Professor Lyman's volunteering to give a course of lectures on the anatomy and diseases of domestic animals to the Bussey students, and by the appointment of a new demonstrator, Mr. D. T. Hinckley, B. A. S., who took charge of the dissecting-room.

The determination of the Corporation, in May, 1883, to put the Bussey Farm to use can hardly fail to commend itself to the agricultural community, and to increase the teaching power of the School. On the appointment of Mr. Hinckley as superintendent of the farm, he proceeded to harvest and store the hay crop, and to put two of the large barns into fit condition for the reception of horses and neat-cattle, which will be taken to board when not in use by their owners. Many idle horses are thus boarded in the vicinity of Boston every winter, as well as cows not in milk, and animals recovering from lameness or the like; and it is anticipated that for these purposes the public will be glad to avail itself of the convenient position of the Bussey Farm, and of its ample and commodious buildings. It is fair to suppose, moreover, that many persons will feel such confidence in the University that they will be glad to intrust valuable animals to its care, in the assurance that they may safely consign them to officers appointed by the Corporation and trained expressly for the positions they occupy. By expending at the farm the hay grown there, manure will be obtained for fertilizing the land, while the methods of cultivation and the courses of crops necessary for procuring the largest practicable yield of hay will be constantly before the eyes of the students. The presence of many animals at the farm will be useful also for purposes of study and comparison. In the course of time, it may prove possible to raise at the farm, incidentally, as it were, some part of the vegetables consumed at the Memorial Hall in Cambridge.

By an arrangement with the Veterinary School of the University, the Bussey Institution has agreed to receive from the Veterinary Hospital in Boston and to board at the farm a certain number of convalescent animals and chronic cases which cannot be economically cared for in the city proper.

It is to be regretted that somewhat extensive repairs have had to be made upon the school building and the greenhouses, as well as upon the barns and the farm house near Roslindale.

The institution is indebted to the Honorable Ambrose A. Ranney, M. C., for the gift of many packages of seeds from the department of agriculture at Washington, which, in accordance with Mr. Ranney's request, were distributed among past and present students of the School and other persons known to be interested in testing them; and to Messrs. Schlegel & Fottler, seedsmen, of Boston, for a large number of typical specimens of seeds of vegetables, which have been placed in the Museum. It is indebted also to Dr. Harold C. Ernst, of Jamaica Plain, for the gift of forty-six solidly bound volumes of horticultural journals and other standard horticultural works, from Sarah Otis Ernst; and to Drs. D. D. Slade and C. A. Cheever and Mr. Daniel Denny for files of agricultural newspapers.

F. H. STORER, *Dean.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I beg to submit herewith the First Annual Report of the School of Veterinary Medicine.

My appointment to the newly created chair of Veterinary Medicine was received Sept. 14, 1882, and the work of organization was immediately undertaken.

It was decided that the School should make a beginning with the first class only; that its further development should be made year by year, as this class progressed, until the complete course of three years should be in full operation; and further, that no advanced or special students should be received until the course of study for which they might apply should have been developed in the regular course of instruction. It was arranged that of the first year's studies General Chemistry and Physiology should be given at the Medical School; all others, including the Practical Anatomy, at the Bussey Institution, — at which place the necessary class- and dissecting-rooms could be supplied. In accordance with this arrangement, notice was at once given, through a few of the Boston daily newspapers, that students would be received on and after September 28. Although this notice was very short, scarcely fourteen days being allowed, two candidates for admission presented themselves; they were, however, not able to pass the required examinations, and were therefore rejected.

On Nov. 21, 1882, the first meeting of the Faculty of Veterinary Medicine was held, and a secretary was elected.

On April 23, 1883, R. H. Harrison, D. V. S., a successful young veterinary practitioner at Lowell, was appointed instructor in Veterinary Anatomy, the duties of the position to begin in the following September.

At the examinations held in June and September, 1883, eleven candidates presented themselves for admission, of whom two were rejected. One, besides passing an excellent examination in the required English subjects, took, of the optional ones, Latin, French, and Algebra, and did himself great credit in all of them.

THE VETERINARY HOSPITAL.

It very soon became evident that, if a successful school was to be established, there must be connected with it a hospital, situated at some central place within the city proper, where cases could be received and exhibited to students. As there was not at this time a single dollar at the disposition of the School, the erection of a hospital building seemed to be entirely out of the question; and about two months were consumed in a futile effort to hire a stable that would for a time at least answer the purpose, as it was considered certain that the rent could be paid from the earnings of such an establishment.

In November, 1882, I was requested to attend a meeting of a committee of the Trustees of the Massachusetts Society for Promoting Agriculture, and to give them an account of our purposes and needs. This was the first of a number of such meetings, one result of which was that $2,000 was given to the School, to be used towards defraying the first year's expense of the proposed veterinary establishment. Early during the discussions with this committee it seemed so probable that, with their aid, something would be done, that an inquiry was begun, which ended in the purchase of a vacant lot of land at the corner of Village and Lucas Streets, and in the erection upon it of a suitable building. On the suggestion of a member of this same committee, the "subscription" plan was adopted as a further source of income. Money was found to buy the land and to erect the building upon it, on condition that a friend or friends of the proposed School would guarantee a net annual income of six per cent for ten years on the investment, — no light obligation. This guaranty was ultimately furnished by Dr. William F. Whitney, of the Faculty of Medicine. Dr. Whitney further offered, if $500 in cash could be raised, to make good any deficit, over and above this amount, that might occur in the first year. Mr. Henry L. Higginson thereupon gave the School $500, the entire amount needed.

Four patients were received into the hospital before August 16; but the establishment was not in fair working condition until that day, and was not entirely finished until considerably after that time. From its opening until September 27, there have been treated in the building thirty-one (31) boarding and seventeen (17) out-patients, as follows: 35 horses, 11 dogs, 1 cow, and 1 cat.

The School also enjoys the use of commodious buildings and exercise yards at the Bussey Farm, to which convalescents are sent from the Village Street building.

During the past summer an International Veterinary Congress was held in Brussels, at which the subject of veterinary education was somewhat fully discussed, and referred to a committee consisting of M. M. Hugues, of the Belgian army, Professor Wirtz, director of the Utrecht Veterinary School, and Professor Müller, of the Berlin Veterinary School. Among other things, it was recommended that the preparatory training required for the study of veterinary medicine should be equal to that given in the highest class of a middle-class school, — *i. e.* a class in which Latin is taught, and whose graduates are admitted to universities. The English Veterinary schools are now beginning to require French or Latin in the matriculatory examination. I would suggest that after the admission examinations of 1884 have been held, this School require candidates for admission to pass a satisfactory examination in Latin, French, or German, at the option of the candidate.

CHARLES P. LYMAN, *Secretary.*

To the President of the University:

Sir, — The cost of maintaining the University Bulletin during the year has been shared, as in previous years, by Messrs. Charles P. Curtis, William B. Weeden, Henry Lee, Alexander Agassiz, and Charles S. Sargent. The Librarian Emeritus has continued in the Bulletin his necrological record of the graduates. In addition to the *Bibliographical Contributions* mentioned in last year's Report as in progress in the Bulletin, two others have been begun by the Librarian.

1. *The Bibliography of Ptolemy's Geography*, in which an attempt has been made to show the importance of the successive editions of the *Geographia* of Ptolemy in the study of early American discovery and cartography. The publication of this contribution is likely to be continued through the present Academic year.

2. *The Kohl Collection of Early Maps*, in which an account is given of various early cartographical records of discovery, collected by the late Dr. John G. Kohl, and purchased of him by the United States Government in 1856, at a cost of nearly $6,000. So much advance has been made since Dr. Kohl formed this collection, and

appended to it his commentaries, that it has been deemed desirable to intercalate notices of other maps, so as to make the enumeration as nearly a complete list of early American maps as circumstances permit.

It may be also stated that the rearrangement of the map department of the Library outside of the American maps (which have been already arranged) has been begun.

The resignation of Mr. Samuel H. Scudder as Assistant Librarian has thrown during the year the direct charge of the Catalogue Department upon Mr. William C. Lane, who had already been charged, as explained in last year's Report, with the care of the shelving and classifying of books, since the retirement of Mr. Arnold.

Mr. Carney, working under Mr. Lane in the shelf department, reports as follows: —

> The number of volumes now permanently placed in the new stack is 73,373, being an addition of 3,104 to classifications arranged in previous years, together with the 227 volumes of the Dante Collection newly arranged.

The classification of the Greek and Latin classics, and attendant literature, has been in progress at the hands of Dr. Theodor Vetter. The scheme followed and the notation employed is explained by Mr. Lane, as follows: —

> The scheme of arrangement follows very closely that of Engelmann's *Bibliotheca Scriptorum Classicorum.* Collections of Greek authors are placed first, divided into classes according to their Latin titles, i. e. Anecdota; Oratores; Oratores Attici; Poetae; Poetae Bucolici, Didactici, Scenici, etc.; Rhetores; Scriptores; Scriptores Biographici, Geographici, Grammatici, Historici, Philosophi, etc. Immediately after each class are put philological works on authors of that class taken collectively.
>
> The collections are followed by the single authors in one alphabetical series. The arrangement of the books under each author is as follows: 1. Complete editions of works. 2. Selections. 3. Editions of separate works (alphabetically). 4. Translations: *a.* Latin; *b.* English; *c.* French; *d.* German; *e.* Italian, Modern Greek, etc. 5. Special Lexicons. 6. Commentaries and critical works, alphabetically by authors. Scholia stand together here under S. The arrangement throughout these classes is chronological, except that successive editions of the same book by the same editor or translator are kept together, taking their place according to the date of the earliest edition in this Library.

The same plan of arrangement will be carried out in the Latin authors.

Attention should be called to the fact, that this arrangement does not correspond with that of the cards in the public catalogue; each method has its advantages, and it is hoped each will prove to be best adapted to the place in which it is used. The principal points of difference are as follows: —

1. In the catalogue the translations are not all brought together apart from the texts, but all the translations of the complete works follow immediately the editions of the text of the complete works, and all translations of any separate work follow the text editions of that particular work; in other words, the primary division is according to subject-matter rather than language.

2. Editions with both text and translation are usually put with translations, instead of with texts as is done on the shelves, but a reference is inserted in the proper place among the editions of the text.

3. Among texts the arrangement is *purely chronological*, i. e. no attempt is made to keep together editions by the same editor. Among translations, on the other hand, the order is entirely *alphabetical* by translators.

4. The critical works on an author are divided according to their subject, instead of standing in one alphabetical series; e. g., under Homer the divisions are: General; Arts and Customs (including Fine Art and Science, also works on the antiquities, private life, morals, civilization, law, etc., of the Homeric age), Batrachomyomachia, Characters (including separate persons), Cyclops, Editions (criticism of), Geography, Hymns, Iliad, Illustrations, Language (grammatical questions), Lexicons, Minor Poems, Name (i. e. of Homer), Odyssey, Proper Names, Prosody, Rhetoric, Scholia, Text, Theology (including Religion, Mythology, Fate, Future Life, Psychology, etc.), Translations and Translating.

In numbering these books a new system of shelf-marks has been introduced in place of the "fixed-location" system generally adopted in the Library. Each mark is of the general form **Ga9.375**. The **G** is common to all the books under Greek authors and will be replaced by **L** for the Latin authors; **Ga** is common to all the authors whose names begin with *A*, the second letter varying with the initial of the author; while **Ga9** is the "author-number" common to all books by or on a particular author (in this case, Æschylus). The **.375** is the distinctive number of a particular book. In like manner the common author-number for Plato is **Gp82**, for Demosthenes **Gd15**. That part of the shelf-mark following the point is properly to be considered as a decimal, and as such will admit of indefinite additions and intercalations being made; e. g., if two books have been numbered Gh62.236 and Gh62.237 and it is desired to introduce another book between them, this will be called Gh62.2365, or any number between .2361 and .2369. For the present none of these additional figures have been employed. In the smaller authors only two places of decimals are used, in the larger three, and in the few cases where three places do not supply enough numbers two or more author-numbers have been used for one author, as for Homer, to whom Gh62, Gh63, and Gh64 have been devoted.

Mr. Carney further reports: —

During the year the collection of unbound newspapers has been arranged in bundles; and about 150 volumes were found complete enough to bind, and to be placed in the collection already arranged in the basement of the old part of the building. The duplicate volumes and pamphlets have been roughly classified in the same apartment. A portion of the lower story of the new part of the building has been shelved to hold the regular files of pamphlets, and on the new shelves these files have been arranged more conveniently than ever before.

The accessions to the University Library for the year, and the present extent of the various departments, are as follows: —

Departments.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library)	8,441	210,462	206.315
Law School	533	19,934	2,852
Scientific School	28	2,428	....
Divinity School	73	16,423	....
Medical School	30	2,078	....
Museum of Zoölogy	288	15.814	9,500
Astronomical Observatory	153	3,070	5,692
Botanic Garden	135	4,322	2,884
Bussey Institution	60	2,477	854
Peabody Museum	77	692	759
Totals	9,818	277,700	228,856

The Whitney Library of Geology, a component part of the collection in the Museum of Zoölogy, is not yet included in the count of the Museum Library.

Of the accessions to the Gore Hall collection, there were added by gift 1,946 volumes and 6,611 pamphlets; and such accessions also include 437 volumes of bound serials (received in parts), and 576 volumes, made by binding pamphlets. The Law Library is diminished by 1,202 volumes, disposed of during the year.

The following table shows the use of books at Gore Hall in 1882–83, as compared with the last four years: —

	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.
1. Books lent out	41,296	41,986	45,481	48,194	48,231
2. Used in the building	10,921	7,812	11,724	10,498	8,654
3. Overnight use of reserved books .	7,519	10,506	11,872	12,891	12,678
Total (excluding No. 3, which is included in No. 1)	52,217	49,798	57,205	58,692	56,885
Cards giving to students temporary admission to the shelves	....	60	85	200	167
Times of use of such cards	....	340	870	2,542	3,340
Officers of instruction reserving books	....	35	38	41	44
Number of books reserved	....	3,330	3,418	4,251	4,316

The increase in the number of books reserved (to which the students have unrestricted access), and the growing use of admission cards, are producing a diminution, as will be seen, in the record of books "used in the building," no record of volumes used being practicable in the other cases.

The 167 students using admission cards have been in these departments: History, 46; Science, 16; Art (including music), 14; Literature, 42; Greek and Latin authors, 36; Philosophy, 5; Theology, 3; and Political Economy, 5.

During 36 Sundays (till the long vacation came) 2,268 persons availed themselves of the opportunity of using the Library on those days, which is an average of 63 each Sunday, being an increase of 6 over last year. The hours were from one to five o'clock. The highest number on any one day was 92 against 91 last year.

The work of the catalogue department is indicated by the following table, which has been furnished by Mr. Lane: —

	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.
1. Cards put into the Public Catalogue	36,390	35,315	41,215	34,168	29,480
2. Cards prepared	20,595	24,887	25,705	18,235	17,015
3. Volumes received during the year .	....	....	7,873	6,848	8,441
4. Pamphlets received during the year	....	....	....	4,469	7,650
5. Volumes (old and new) catalogued .	....	....	....	4,271	6,222
6. Pamphlets (old and new) catalogued	....	....	....	1,363	1,333

More long sets have been bought this year than usual, and this has diminished the number of catalogue-cards in proportion to the volumes received. A scarcity of money for administrative work, compared with the sum available for the purchase of books, has rendered it desirable during the year to buy costly books in larger number than usual, and to revise the shelves for the purpose of completing long sets of the publications of societies, etc. By this means some marked deficiencies in the Library have been supplied. The use of a contents-book, to take the place of enumerating long contents in the author-cards, is another cause for the diminution in the number of cards prepared. It should be borne in mind that some discrepancy of count necessarily arises from enumerating by titles and volumes respectively, at different stages of the catalogue processes.

The departmental cataloguing now done in Gore Hall covers 1,659 volumes and pamphlets for the year, beside the record slips made of books bought for the Class Rooms.

The smallness of the catalogue staff has prevented any work on the recataloguing of the titles contained in the old printed catalogue, except so far as new editions of the same book has made it convenient to treat the older editions at the same time ; and it has also caused the accumulation of at least 6,000 titles among the accessions of recent years, which it has not been found possible to catalogue permanently. Temporary records of a necessarily imperfect character have, however, been made to assist in finding the books when wanted, and to guard against new purchases of the same titles.

Mr. Lane has also given his attention to working out a scheme for a numerical notation to be applied to the proposed printed index to the card catalogue, left incomplete by the resignation of Mr. Scudder ; and to rearranging some parts of the card catalogue, that it may be made more consistent with the methods of shelf-arrangement now in use. Various lesser schemes for improving the details of the card catalogue, and assisting in the comprehension of its complicated system, have been also attended to.

The ordering department has still continued in charge of Mr. William H. Tillinghast.

Under the will of the late Joseph J. Cooke of Providence, this Library was one of ten libraries entitled to bid off $5,000 worth of books at the public sale of his library. The two parts of the collection already sold contained but little which we needed, and though our scale of bids was high, the prices brought were in large part above our limits. The plan of producing an artificial competition, and establishing factitious prices for books, which was adopted at this sale, in emulation of the plan first tried with advantage to the testator's estate in the Brinley sale, probably enhances the market prices of books, to the detriment of all buyers, and without any sound gain to the interests of letters. There remains a third part of the Cooke library yet to be sold.

The Library still continues to have charge of the issue of the weekly *Calendar* of the University.

JUSTIN WINSOR, *Librarian.*

To the President of the University:

Sir, — As Director of the Herbarium I have the honor to submit the following Report: During the last Academic year 8,775 sheets of specimens have been prepared, mounted, and incorporated into the collection; and 135 volumes and 171 pamphlets have been added to the Library. Only 37 volumes and 5 pamphlets have been acquired by purchase. The remainder are gifts, of which 61 volumes and 156 pamphlets are from the Director, 16 volumes from Professor Goodale, a larger number from Professor Henry J. Bigelow (not counting some duplicates), being relicts of his father's botanical library, and three imperial folio volumes from Mrs. Henry Greenough and her late husband, in memory of their deceased son, Henry Greenough, Jr., who brought the work from Manila. This is the sumptuous illustrated edition of the Padre Blanco's Flora de Filipinas; and the volumes were put into fitting and costly binding by the donors.

The above enumeration does not include sundry Journals, Academical Transactions, Reports, etc., received as continuations or otherwise, which have no direct relation to botany. The additions of botanical specimens to the Herbarium, moreover, are counted only when mounted and ready for incorporation. Several thousand specimens more have been received, examined, selected from, and distributed as duplicates to other herbaria. Of the 8,775 sheets reported as incorporated during the year, which closed on the 1st of September, over 5,000 (holding probably 7,000 specimens) were derived from the rich herbarium of the late George Curling Joad, of Wimbledon, near London, from which at least 3,000 more are still to be selected. For this most valuable collection of the plants of Europe and adjacent parts of Africa and Asia — or rather for such portion of it as we choose to retain — we are indebted to Sir Joseph Hooker, Director of the Royal Gardens at Kew, to which establishment it was bequeathed, and by whom, after certain selections had been made from it for the Kew Herbarium, it was generously made over to this Herbarium for the supply of our needs, the residue to be passed on to the National Museum at Washington. So rich and abundant this collection proves to be, containing as it does the principal published *exsiccata*, and most of the critical or local species of Europe, in authentic and attractive specimens, that, notwithstanding the ample appropriation on our part, the materials which pass from our hands will still well represent the principal part of the European flora. This collection is supplemented by the presentation (in continuation of former gifts) of several hundred plants of Algeria and Tunisia on the part of Dr. Cosson, of Paris, who is engaged upon a Flora of Algeria.

The demands which such foreign collections make upon the time of the Curator, Mr. Sereno Watson, and myself, although very considerable, is small in comparison with that which has to be devoted to the critical examination and naming of the multifarious collections, large or small, which are incessantly poured in upon us from all parts of our own country. A response to these demands cannot be avoided, generally cannot be deferred, in justice to the collectors and donors, and without risk of diverting the streams which, flowing in ever since its establishment, have enriched this Herbarium and rendered it adequate to its leading purpose. But they press so heavily and unceasingly upon the Curator and myself that they greatly retard our progress in the preparation of the works which we have undertaken and which ought to be proceeded with. Nevertheless, two very considerable "Botanical Contributions" have here been made during the past year, one by Mr. Watson, one by myself, and published by the American Academy; and I am now carrying through the press an important portion of the Flora of North America, amounting to fully one-eighth part of this lifelong work.

The growth of the Herbarium has made additional accommodation necessary. To supply this, new cases have been added, at a cost of about two hundred and forty dollars. Also — but since the expiration of the year — the corridor of wood and glass which connected the Herbarium with the Director's residence and study, has been reconstructed in brick with tinned roof and ironed doors, thus gaining a needed apartment and increased security against fire. This alteration has involved an outlay of $341.65.

Five-sixths of the small salary of the Curator for the year past has been defrayed from an appropriation of $1,000, made for this purpose, by the Trustees of the Society for the Promotion of Agriculture. Without this aid, Mr. Watson's invaluable services could have been secured only by the diminution to nearly this extent of our small fund. The continuance of this gift is hoped for.

ASA GRAY, *Director.*

To the President of the University:

Sir, — As Director of the Botanic Garden, I have the honor to present my Report for the year 1882–83.

Last spring, it was found that the drought of the previous year had been disastrous in its effects, our losses of herbaceous perennials in the beds bordering on Raymond and Linnaean Streets being especially heavy. As far as possible, the losses were repaired by setting out young plants, but the dry summer proved very unfavorable. The drought of this year, severer than that of last, was hardly relieved by the few light showers. It was only by a liberal use of water from our hydrants, that the more delicate plants were brought through the season. The large pond became completely dry, and the smaller one fell much lower than ever before. It may here be said, though not coming strictly within the limits of the present Report, that a tubular well has been sunk during this autumn, which yields an abundant supply of good water. It is therefore probable that we shall not suffer again so severely from droughts; at least we shall be less dependent upon the City water-supply. If the amount of water furnished by the new well be as large as is now promised, we can make a freer use of water than heretofore in the cultivation of certain groups of plants. Notwithstanding the drought, all plants and specimens needed for the Biological and Botanical Electives have been promptly furnished. The scarcity of material was felt only during the progress of the Summer Course in Botany.

Owing to the perishable nature of the wood used for the labels in the Garden, it has been found necessary to devote much attention to the work of replacing them by more durable ones. Unlabelled plants are nearly useless for the students who make use of a Botanic Garden ; it is therefore important to secure, even at a high first cost, labels which will remain legible for a term of years. Plainly written or painted labels, of a sort shown by experience to be fairly durable, have been put in the places of the decayed and nearly illegible wooden labels, and it is proposed to adopt the same kind throughout the garden. The work has been done by Mr. L. S. Bailey, Jr. of Michigan Agricultural College.

By extensive repairing, the Greenhouses in the front range have been put in fair condition. The frame-work of the older buildings is so far decayed, that it seemed hardly worth while to endeavor to keep them from falling. It was thought, however, by members of the Garden Committee, whose advice was sought by the Director, that it would be best to make considerable repairs of the wood-work before winter. The two Green-houses in the second range have been furnished with a large Hitching's boiler, and the pipes of both houses are fed from one source. The expenditure for coal has been thereby reduced. Extensive repairs have been also made in the dwelling-houses in the Garden.

The supply of apparatus for demonstration and research, obtained through the liberality of Messrs. H. H. Hunnewell and Frederic L. Ames of the Garden Committee, has been further increased by several invoices. With two exceptions, the shipments of foreign goods have arrived in excellent condition, and have proved satisfactory. In one of the instances just referred to, the loss has been adjusted by the transportation company.

The apparatus for demonstration in Vegetable Physiology has been in use in the lecture-room, since its arrival, and has proved of great utility. There is, however, as yet, no room which is available for experiments requiring much time, for the whole building is open to the botanical classes, and all the table-room is required by undergraduates. During the summer, when one of the greenhouses was temporarily vacated, shelves and tables were fitted for a series of investigations upon the respiration of plants, and several other subjects; but it must be said that this provisional laboratory was too hot at times to be occupied with safety to health. The results of the investigations which were carried on under these serious disadvantages by Dr. George A. Smyth are not yet ready for publication. At the close of summer, it became necessary to refit the greenhouse for the reception of plants, and the dismantled apparatus had then to be brought back and stored in our already crowded rooms.

The timely vote of the Corporation by which Harvard Hall is to be placed at the disposal of the Botanical Department at the end of the current year will afford space for the apparatus for research. At a moderate expense, rooms in Harvard Hall can be made available for botanical laboratories. It is to be hoped that the disadvantage of remoteness from the Botanic Garden, whence must come the supply of material for study, will be more than compensated by proximity to the other College buildings. The lecture-room at the Garden will still be needed for those courses upon Systematic and Economic Botany which require the use of living specimens.

The accessions to the Museum during the year have been large and important. The collection of drugs, dye-stuffs, and fibres has been increased, and all of the specimens liable to be attacked by insects have been placed in glass jars. Many valuable specimens have been added also to the collection illustrating morphology. It is proposed to transfer to Harvard Hall the specimens which are of most use for lectures, retaining at the Garden all the others to form a Museum open to the public.

The following changes have been begun during the year and are now in progress. By rearrangement of the Orders, where this could be done with little outlay, room has been secured for grouping together the living plants which are of medicinal repute, or are useful in the arts; such a collection constitutes the best possible illustration of applied botany. Other places have been taken for groups of plants by which the ordinary and the unusual forms of stems, leaves, etc., can be exhibited. Other beds have been appropriated for Twiners, Climbers, Insectivorous Plants, Monstrosities, and the like.

The plan contemplates the exhibition in our Garden of — 1. The plants which best illustrate vegetable structure and habits; 2. The plants which are used in medicine and the arts; 3. The plants which are needed for purposes of systematic botany, and which cannot be well kept in an herbarium, owing to the changes which they undergo in drying; 4. As full a representation as possible of the herbaceous plants of North America, especially those of Gray's Manual; 5. A selection to illustrate the Natural Orders. It will be seen that these plans do not give room for a display of plants which have an interest merely for the general public. The end which is kept in view is to secure for the students of the University, and for all students in our vicinity, an exhibition of the plants concerning which educated men should know something.

At the close of the year, Mr. William Falconer, who has been mentioned in previous reports as the faithful and efficient head-gardener gave up his position to accept private employment. His successor, Mr. W. A. Manda, has received a thorough horticultural training in Germany, France, and England, and has entered with spirit upon his work.

The Director is happy to report that the income of the Garden has exceeded the expenditures for the past year by more than six hundred dollars. The present funds are therefore sufficient for the running expenses upon the present scale; but they do not justify the replacing of the dilapidated greenhouses by structures worthy of the University. It is to be hoped that friends of the Garden will not long allow our exotic plants to remain in peril. The completion of the subscription, to which reference has been made in the reports for the last two years would enable us to rebuild to advantage.

GEORGE LINCOLN GOODALE, *Director.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — As Director of the Chemical Laboratory, I have the honor to present the following Report for the Academic year 1882–83: —

During the past year, the courses of instruction in the Laboratory were distributed as follows: The course of elementary lectures on general chemistry to the Freshman class was given by the Director; the course of descriptive chemistry (Chemistry 1, of the elective courses of the College) was, as usual, conducted by Professor Jackson, with the assistance of Dr. Mabery during the practical exercises in the Laboratory; the course on Mineralogy (Chemistry 2) was given by the Director, assisted by Mr. O. W. Huntington; the course on qualitative analysis (Chemistry 3) was given as heretofore by Assistant Professor Hill, with the assistance of Dr. Mabery in the Laboratory work. The course on quantitative analysis (Chemistry 4) was given by Dr. L. P. Kinnicutt, under the supervision of the Director; the course on organic chemistry (Chemistry 5) was given, as in past years, by Professor Hill; the advanced course in mineral chemistry (Chemistry 6) was given by the Director; the advanced students in organic chemistry (Chemistry 9) worked under the special direction of Professor Hill. The several laboratories were under the constant oversight of the assistants; the qualitative laboratory, under that of Dr. Mabery; the quantitative laboratory, of Dr. Kinnicutt; the organic laboratory of Mr. Stevens; and the mineralogical laboratory, of Mr. Huntington.

The total number of students occupying desks at the laboratory was one hundred and seventy-eight, as follows: Seniors 28, Juniors 54, Sophomores 47, Freshman 1, Lawrence Scientific students 8, Graduate students 3, Summer course 35. These students were distributed among the several courses as follows: —

Chemistry 1	68
Chemistry 2	28
Chemistry 3	42
Chemistry 4	18
Chemistry 5	9
Chemistry 6	4
Chemistry 9	1
Graduate courses	3
Summer course	35
	208

Last year was marked by continued activity in the scientific work of the Laboratory.

Most of the results obtained were published under the following titles: —

In the Proceedings of the American Academy of Arts and Sciences, Volumes XVIII. and XIX.

1. On Certain Substances obtained from Turmeric (Second Paper). By C. Loring Jackson and A. C. Menke.
2. On Certain Substituted Acrylic and Propionic Acids. By C. F. Mabery and F. C. Robinson.
3. On the Products of Wood at Low Temperatures. By C. F. Mabery.
4. On the Vapor Density of the Chloride, the Bromide, and the Iodide of Antimony. By C. P. Worcester.
5. On Certain Parabrombenzyl Compounds. By C. Loring Jackson and G. F. Hartshorn.
6. A New Method of preparing Borneol from Camphor. By C. Loring Jackson and A. E. Menke.
7. The Volumetric Determination of Combined Nitrous Acid. By Leonard P. Kinnicutt and J. U. Nef.
8. The Phenyltribrompropionic Acid. By Leonard P. Kinnicutt and George M. Palmer.
9. On the Crystalline Form of Chlordibromacrylic Acid. By Oliver W. Huntington.
10. On Certain Substances obtained from Turmeric (Third Paper). By C. Loring Jackson.

In the American Journal of Science.

11. Possible Variability of the Law of Definite Proportions. By Josiah Parsons Cooke.
12. A Simple Method of correcting the Weight of a Body for the Buoyancy of the Atmosphere when the Volume is unknown. By Josiah Parsons Cooke.

In the Proceedings of the German Chemical Society.

13. On the Substituted Pyromucic Acids. By H. B. Hill.

In the American Chemical Journal.

14. On a Modification of Troack's Process for preparing Carbonic Oxide. By L. P. Kinnicutt.

The eleventh summer course of instruction in Chemistry, given in 1883, under the direction of Dr. Mabery, was attended by thirty-five persons, many of whom were teachers in other colleges or in secondary schools. Courses were given in descriptive chemistry, in qualitative and quantitative analysis and also in organic chemistry. The remarkable success of these summer courses has been due wholly to the exertions of Dr. Mabery, and they have served a very useful purpose in diffusing the methods of practical teaching used in this Laboratory, and in awakening among teachers the spirit of original investigation. The courses are open to students of both sexes, and have from the first attracted many women teachers, who have thus been able to secure the advantages which the University offers for science teaching.

The equipment of the Laboratory has been fully maintained during the past year, although not materially increased. The mineralogical collection has been constantly growing, and at the close of the year was largely increased by the addition of the very valuable collection of meteorites formerly belonging to the late Prof. J. Lawrence Smith. This collection was purchased by private subscription and presented to the University.

JOSIAH P. COOKE, *Director.*

To the President of the Unviersity:

Sir, — During the past year the subscription of five thousand dollars annually for five years, which was secured in 1878, has expired. To replace it an attempt has been made to raise by subscription the sum of one hundred thousand dollars as a permanent fund. Up to the present time about fifty thousand dollars have been promised for this purpose, the income of which will permit a large amount of useful work to be carried on permanently by the Observatory. This sum will be sufficient to prevent the sudden restriction of scientific operations, which would otherwise have been inevitable on the expiration of the subscription of 1878. It is hoped that additional donations may eventually increase this fund to one hundred thousand dollars, and thus permit the same degree of activity to be maintained as during the past five years.

I give my best thanks to the ladies and gentlemen who by their generous gifts have aided the Observatory at this critical period in its history. Their names, with the amount of the subscription of each, are given below in alphabetical order. Asterisks indicate subscribers to the temporary fund of 1878, as well as to the present permanent fund.

LIST OF SUBSCRIBERS.

NAME.	AMOUNT.	NAME.	AMOUNT.
A Friend	$10,000	* H. H. Hunnewell	$1,000
* W. Amory	2,000	S. Johnson	250
Francis Blake	500	* H. P. Kidder	2,485
* J. I. Bowditch	5,000	A. A. Lawrence	500
* Martin Brimmer	500	A. T. Lyman	500
Shepherd Brooks	500	* T. Lyman	200
T. Q. Browne	500	* W. P. Mason	200
* J. A. Burnham	1,000	* F. H. Peabody	500
* C. F. Choate	500	* O. W. Peabody	250
Wm. Claflin	200	* E. C. Pickering	1,000
Alex. Cochrane	200	H. B. Rogers	1,000
* C. P. Curtis	1,000	* Stephen Salisbury	2,000
J. C. Delano	250	* Mrs. D. Sears	200
W. Endicott, Jr.	2,000	* N. Thayer	5,000
* J. M. Forbes	1,000	* C. E. Ware	500
* Geo. Gardner	100	* Miss Wigglesworth	200
* J. L. Gardner	500	* R. C. Winthrop	250
R. C. Greenleaf	500	R. C. Winthrop, Jr.	100
* Mrs. A. Hemenway	2,000	Mr. and Mrs. J. H. Wolcott	200
* G. Higginson	5,000		

I take this occasion to gratefully acknowledge the aid of the Visiting Committee, to whose efforts both this fund and the subscription of 1878 are due. It is hoped that the results attained will satisfy the friends of the Observatory that this increase in income has been a judicious application of money to scientific purposes. The increase in the number of assistants and of instruments in active use is especially to be noted.

In the present distribution of observatory work, my own observations are chiefly made with the large equatorial and the meridian photometer. Mr. Wendell takes part in the observations with both these instruments, and Professor Searle in those made with the equatorial. Messrs. Cutler and Eaton assist in recording these observations. Their reduction is carried on by Miss Farrar, Mrs. Fleming, and Mr. Cutler, with the aid and partly under the supervision of Mr. Wendell. Their preparation for the press and publication are conducted by Professor Searle and myself. The meridian circle remains in charge of Professor Rogers, who is aided in the observations by Mr. Pratt, and in their reduction also by Mrs. Rogers, Miss Saunders, Miss Bond, Miss Winlock, and Mr. Eaton. The equatorial mounted in the small dome is actively employed by Mr. Chandler, mainly in the observation of variable stars. He is assisted in the reductions by Mr. Metcalf. The time signals are in charge of Mr. Edmands. The meteorological observations and the ordinary business matters of the Observatory are usually conducted by Professor Searle. The computation of cometary orbits is undertaken by Mr. Chandler, and the announcements of astronomical discoveries and results by telegraph or by published circulars are in charge of Mr. Ritchie.

East Equatorial.

Eclipses of Jupiter's Satellites. — Photometric observations of these eclipses have been continued upon the system adopted in 1878. In all, two hundred and forty eclipses have now been observed, fifty-five since the end of October, 1882. Some observations were also made last spring to determine the accuracy with which occultations and transits of Jupiter's satellites could be observed. The method heretofore in use has been to observe the times of contact, but these are not easily determined, from the indefinite outlines of the planet and its satellites. The observations just mentioned were made with a double image micrometer. An image of the satellite was placed midway between the two images of Jupiter, and the time of the setting was recorded. Each measure of this kind furnished a determination of the distance between the centres of the planet and satellite, and a large number of measures could be obtained on each occasion instead of a single estimate of contact. The result showed that the time of an occultation or transit could thus be determined with a probable error of about nine seconds, which is less than the probable error in observing an eclipse by the old method.

Revision of Zone Observations. — The stars between 50′ and 60′ north of the equator for the epoch 1860, and occurring either in the zones published in Volume VI. of the annals of this Observatory or in the Durchmusterung, have been twice observed by Professor Searle with the modified wedge photometer described in the last Report. The transit of each star over a bar, and its subsequent disappearance in the wedge were recorded by the chronograph, while its approximate declination was estimated with the aid of three transverse bars 5′ apart. The reduction of these observations is far advanced, and the examination of discrepancies between them and those made under Professor Bond's direction has been begun, for the purpose of detecting any cases of considerable proper motion or variability which may exist in this zone of 10′ in width. Differences amounting in right ascension to 0 .5, and in declination to 0′.5, are investigated by more accurate observations when the discrepancy is not explained by an error in reduction. A difference of three quarters of a magnitude in the two separate results obtained with the wedge photometer is also regarded as large enough for special examination. The number of stars which require re-observation does not thus far seem likely to be great. Even a merely negative result with respect to proper motion will have some interest, as it will tend to establish the comparative fixity of the fainter stars, which is at present assumed rather than known. As Professor Bond's zone observations were finished in 1860, the interval between them and the present revision is sufficient to bring into notice any case of annual proper motion much in excess of 1″, either in right ascension or in declination. In the provisional reduction of the photometric portion of the work, the scale of magnitude is made to depend upon the Durchmusterung, but it is expected that the meridian photometer will soon provide the means for a more complete reduction.

Objects having singular Spectra. — The search for these objects has been continued; the regions selected for examination have been chiefly in the Milky Way, but little time has been devoted to this work on account of the use of the large telescope for more important purposes.

Standards of Stellar Magnitude. — In accordance with a plan proposed in the Proceedings of the American Association for the Advancement of Science, xxx. 1, it is intended to form charts of the stars in small areas 4^m in extent in right ascension and 10′ in declination. The centre of each area follows one of a selected series of twenty-four bright equatorial stars at an interval of 4^m, in the same declination. Besides making the charts, it is proposed to determine the magnitudes of a sufficient number of faint stars in each region to exhibit a scale of magnitude to which reference may readily be made by observers who desire their estimates to be directly comparable with those of others.

In obtaining material for the proposed charts, various plans have been tried, with the view of economizing time so far as practicable. Data have been collected for several stars, sufficiently complete to enable the construction of the charts to be undertaken.

Comets. — The present arrangements for the distribution of astronomical intelligence, to be further mentioned below, insure the early receipt at this Observatory of the news of cometary discoveries, so that the first accurate observations of a comet may often be made here. This was the fact with regard to each of the two comets found during the year. The observer was Mr. Wendell. The positions he obtained were extensively employed in the computation of orbits by various astronomers, and preceded by twenty-four hours those obtained elsewhere.

Variable Stars. — The large telescope has been frequently used in observing variable stars, too faint to be visible with the west equatorial, the work of which is mentioned below. The collection of data for charts of the immediate neighborhood of many variable stars has also been undertaken with the large telescope.

Spectra and Color of Stars. — This subject has long been under consideration, in the hope that good means may soon be found of determining the position of the lines and the distribution of the light in different types of stellar spectra. As yet, the observations made have been experimental and preliminary. A large spectroscope was ordered from Hilger, of London, for the purpose of research in this direction, and was received early in 1882. Owing, however, to the difficulty which the maker of the instrument found in understanding, from mere correspondence, the essential objects to be aimed at in its construction, this spectroscope has not proved satisfactory for the proposed work. A more promising form of apparatus is now under consideration.

MERIDIAN CIRCLE.

After an interruption of about a year, the fundamental observations with the meridian circle were resumed on February 8 1883. Before the commencement of the work the level and azimuth of the instrument were brought nearly to zero, by scraping the segmental bearings of the pivots. Between February 8 and November 1, 2383 observations were made of the fundamental stars, 136 of Polaris, and 121 of the Sun, making in all 2640. As heretofore, all the instrumental constants are referred to

Polaris alone. An average of 10.5 independent determinations of the declination of this star have been made at each transit. The actual number of declinations observed is 1420.

The level of the instrument as determined with the Clark reversible level has remained remarkably constant during the year, the entire range of variation having been only $0^s.17$. The individual measures differ on the average by about $0^s.02$ from the adopted mean values.

As formerly, the reversible level has been used to determine the variation of the index error of the circle for the interval during successive transits of the Pole Star. The long collimator has been used for the same purpose during observations near the equinoxes and the solstitial points; but on account of the variation of the fixed point of the collimator during the daytime, and especially on account of the frequent unsteadiness of the image, the results obtained are far less satisfactory than those derived from the level.

A series of observations undertaken for the determination of the longitude of McGill College Observatory, Montreal, extended from June 2 to June 23 inclusive. The plan of the campaign involved an exchange of observers in addition to the determination of personal equation by the usual methods. Accordingly, after three nights at Cambridge and Montreal, Professor Rogers exchanged stations with Professor McLeod. The results for personal equation at each station are as follows: —

MONTREAL.	CAMBRIDGE.
Rogers, *minus* McLeod.	Rogers, *minus* McLeod.
June 13 + $.096^s$.	June 28 + $.143^s$.
June 14 + .111.	June 30 + .144.

The observations at Cambridge were made with the Russian Transit, but simultaneous observations were made with the meridian circle by Mr. Brown. The whole number of observations made during the series is about 400, and their reduction is nearly completed.

After the completion of the reduction to 1875.0 of the zone observations made between 1870 and 1879, it was found by direct comparison with the Durchmusterung positions brought forward to the same epoch, that observations were wanting for 306 stars. It was also found that in many cases, especially between 19 hours and 1 hour of right ascension, the wrong star was observed when there were two or more stars in the same field. During the observations no less than 528 stars were for various causes marked in the observing records as not seen. Since, in a large number of cases, the failure to observe was due to the faintness of the stars under a bright field illumination, it was thought desirable to improve the character of the illumination before commencing the work of re-observation. Accordingly, Mr. George B. Clark, after a series of experiments with a dark field illumination for lines ruled upon glass, arranged a set of mirrors in the tail-piece of the telescope, by which the light, passing from a lamp swinging upon gimbals, through an opening in the tube, is thrown down upon the glass plate in two planes at an angle of about 45°.

When a red-shade glass is interposed, an even illumination is obtained, under which stars of the tenth or eleventh magnitude can be easily seen.

The re-observation of the scattering zone stars was begun October 9, and between this date and November 1, 512 observations were made. The gap which has been filled extends from 19^h 40^m, to 1^h.

The reduction to 1875.0 of the zone observations made between 1870 and 1879 has been completed. The reduction of the observations of fundamental stars for the same interval is also completed. The entire computing force assigned to the Meridian Circle is now engaged in the preparation of copy for publication. This work will be completed in about five weeks.

It will be seen therefore that practically two volumes are ready for publication. The third volume, containing the observations of secondary stars brighter than the magnitude 6.5 and the final catalogues, is in a forward state of preparation.

The final catalogues will depend upon about 46,600 observations, distributed as follows: observations of zone stars, 24,300; of primary stars, 15,200; of secondary stars brighter than the magnitude 6.5, 7,100.

MERIDIAN PHOTOMETER.

The position of this instrument, as a permanent portion of the Observatory work, may now be regarded as fairly established. After a thorough trial it has shown itself capable of determining absolute stellar magnitudes more satisfactorily than any other photometer that we have tried. It bears the same relation to photometry that a transit circle does to measurements of position, and will be regarded as the standard to which all our other measures will be reduced. As it is capable of measuring any star of the ninth magnitude or brighter, its field of work is, for the present, indefinitely great. We are now able to determine satisfactorily the brightness of any such stars when they are desired for any special purpose by other astronomers.

One hundred and thirty-three series, including about twenty thousand sittings, have been made since November 1, 1882, by Mr. Wendell and myself. The most important investigation in progress has been the revision of the Durchmusterung magnitudes. The results of the estimates of brightness made at thirteen observatories, and extending over a period of ten or fifteen years, will thus be brought together and reduced to a single system.

The stars adopted as standards in the Uranometria Argentina, have been observed with this instrument on at least three nights each. The scale has thus been determined in terms of the photometric scale. A comparison has also been made with the measures of the brighter of these stars, obtained with the small meridian photometer. The results with the new instrument are on the average 0.04 magnitudes fainter. This difference is so small that its existence may be regarded as doubtful. No systematic difference depending upon the right ascension is perceptible. On the other hand, a comparison with the Durchmusterung, Uranometria Argentina, and a series of eye estimates, indicate well-marked systematic errors in these catalogues, due to the presence of the Milky Way. In seven and eighteen hours of right ascension the stars are estimated two or three tenths of a magnitude too faint in each of these catalogues. The proximity of bright stars, especially those in Orion, appears a reasonable explanation of this source of error.

Some miscellaneous observations have also been taken, of which the most interesting are those of Neptune, of the comparison stars of *S Cancri*, and of other variables. Observations of Neptune on eleven nights give its light as 7.71 ± .02.

MISCELLANEOUS.

Variable Stars. — The study of the variable stars by Mr. Chandler has been an important part of the Observatory work. The bibliography is nearly completed so far as the first extraction of references is concerned. Notes have been prepared to exhibit the evidence of variability which has been published with regard to about twelve hundred stars. This list excludes many cases in which the evidence is entirely inadequate. A table, giving all the published maxima and minima of each of the variables of long period, is now in process of construction. The preparation of this table has led to the important result that an interval of several years occurs in which no observations appear to have been made of about thirty of these objects. About one hundred and forty stars belong to this class, and since last April all of them have been observed by Mr. Chandler, with the six-inch Clacey Equatorial mounted in the west dome. According to the present plan of work, he observes each of these stars at least twice a month, and more frequently during its brightest phases. Charts of the vicinity of these variables have been prepared, and some progress made towards their completion. Similar charts have been made for about seventy telescopic stars suspected of variability, and nearly two hundred observations of these stars have been obtained. The color of the variable stars is also estimated, about three hundred observations of this class having already been made.

A circular was distributed asking the aid of amateurs and others in the observation of stars known or suspected to be variable. It is believed that by co-operation much valuable material may be collected and much time saved. Numerous replies have been received and important results have been obtained, especially by Mr. H. M. Parkhurst, of New York, and by the Rev. J. Hagen, S. J., of Prairie du Chien, Wisconsin. The great difficulty encountered by most of the observers was that of identifying with certainty the fainter stars, although this is one of the first things that should be learned by any person desiring to do useful astronomical work.

Astronomical Photography. — With the assistance of Mr. W. H. Pickering, Instructor in Physics at the Massachusetts Institute of Technology, an investigation was undertaken in astronomical photography. Two objects were kept in view: first, the determination of the light and color of the brighter stars, and, secondly, the construction of a photographic map of the whole heavens. After numerous preliminary observations, a method was employed by which a photograph of the brighter stars included in about one-twelfth of the entire heavens could be obtained on a single plate.

Maps were also obtained containing a region of about 15° square, containing stars as faint as the eighth magnitude. The color exercised a marked influence on the intensity of the photographic images, in some cases producing a difference equivalent to four magnitudes. It is thought that photography may offer the most delicate test we yet have of the color of a star, — differences too small to be perceptible by the eye becoming distinctly visible in the photographic images.

A circular has been issued to request the donation of specimens of astronomical photography, to be added to those already belonging to this Observatory. Many of the early efforts to render this mode of research available were made by Professors W. C. and G. P. Bond, and the numerous results of their work now preserved here have great historical interest. The photographs of the solar eclipses of 1869 and 1870, taken under the direction of Professor Winlock, form another important portion of the collection. It is hoped that the additional specimens received in response to the circular will permit the formation here of a series fully illustrating the origin and progress of astronomical photography. Many fine examples of the art have already been presented to the Observatory. It is intended hereafter to issue a catalogue of the collection, in which the proper acknowledgment will be made of the liberality of each contributor to it. It will be desirable at the same time to indicate the existence of other important astronomical photographs, and the places where they are preserved. Information of this description will accordingly be gratefully received. Original negatives, or prints on glass from such originals are especially welcome, since they are free from many of the defects of paper prints. Much inconvenience and delay in the reception of these specimens, and of any gifts intended for the Observatory which cannot be sent by mail, may be avoided by forwarding them by a vessel bound for Boston, instead of by one destined for New York.

Time Signals. — The attention of the public has been directed to this department of our work by the introduction of the new system of standard time. The policy of this Observatory, with regard to the change, has been to avoid taking any action tending to force it upon the public against their wishes, but to point out, and so far as possible to avert the difficulties that would arise should two systems of public time remain in general use. An early decision was required, since the railroads centring in Boston made their assent to the change conditional on the adoption of the new time in dropping the Boston time-ball. Action was delayed, however, until the official assent of the city of Boston had been given to the adoption of the new time for striking the hour-bells and for the public clocks. The unanimity and ease with which the community adopted the new time was largely due to the activity of Mr. Edmands, Assistant in Charge of the Time Service.

It is probable that the use of our signals will soon be extended by the introduction of new devices. The Rhode Island Electric Company and the New England Telephone and Telegraph Company are now receiving our signals without charge while they conduct experiments with this view.

The Boston time-ball was dropped on 361 days, — at noon on 321 days by telegraph, and on 40 days by hand. On four days it failed to drop at noon, but was dropped five minutes later, — on three days by telegraph and on one day by hand, — according to the usual arrangement. On December 6, 1882, the ball was dropped at 8 h. 30 m. A.M., and at 4 h. 0 m., P.M., as well as at noon, for the benefit of those desirous of making exact observations of the transit of Venus.

Telegraphic Announcements. — The system of announcing astronomical discoveries employed here for some years past has received an important extension during the last year. An association of over fifty European observatories has been formed, with its headquarters at Kiel, for the purpose of expediting the announcement of astronomical discoveries. The Smithsonian Institution, which had for many years rendered an important service to astronomy by transmitting astronomical telegrams between Europe and America, courteously signified its readiness to transfer this function to the Observatory of Harvard College, upon learning that this Observatory was prepared to undertake it. The change was announced by a circular issued by the Smithsonian Institution on January 10, 1883, and since that time the Observatory has distributed in this country the astronomical intelligence received from the European association, and has forwarded to Kiel information of American discoveries.

The Observatory is fortunate in having secured the assistance of Mr. John Ritchie to take charge of this department of its work.

Both Messrs. Chandler and Ritchie, by whom the present system of telegraphing astronomical announcements was devised and carried into effect, are therefore now included in the corps of the Observatory.

The early transmission by telegraph of observations and computed elements of comets between this observatory and that of Lord Crawford at Dun Echt is continued as in former years. The similar interchange of information with Dr. Oppenheim of Berlin is likewise maintained. The intelligence thus transmitted is distributed in Europe and here by means of special circulars.

Transit of Venus, 1882. — For reasons stated in the last Report, no elaborate preparations were made at this Observatory for observing the transit of Venus on the sixth of last December. But as the weather was favorable during most of the day, a considerable number of observations was obtained. Six telescopes were employed in observing the contacts. With the large equatorial, photometric and spectroscopic observations were also undertaken. The photometric measures furnished the result that the relative light of the Sun and Venus was in the ratio of 100 to 1.6, while the light of the sky surrounding the Sun would be expressed on the same scale by 7.5. This comparative darkness of Venus with respect to the sky was confirmed by direct observation. The spectroscope furnished no evidence of an atmosphere surrounding Venus ; but the dispersion employed was not large.

The diameter of Venus was carefully determined by Professor Rogers and Mr. Chandler, with the results 16″.09 and 16″.35. The method employed was that of transits over inclined lines· An account of all these observations appears in the Proceedings of the American Academy of Arts and Sciences, XVIII. 15.

Almucantar. — An interesting series of observations has been made by Mr. Chandler to test the merits of an instrument devised by him some years ago. It consists essentially of a telescope floating upon mercury, and is designed for the observation of transits over given parallels of altitude. Its name has been derived from this circumstance. This instrument, although having an objective of only 1¾ inches aperture, has given results of a high degree of accuracy, the probable error of a single determination of zenith distance being 0.″5 to 0.″6. Mr. Chandler is now directing the construction of a large instrument of the same kind with a telescope five inches in aperture, and intends to apply it to certain important problems in practical astronomy, for the solution of which it possesses advantages over other astronomical instruments.

While passing last summer in Europe, I visited the observatories at Greenwich, Oxford, Cambridge, Paris, Brussels, Bonn, Strasburg, Berne, Geneva, Milan, Vienna, Berlin, and Potsdam, and the private observatories of Dr. Huggins, of Mr. Common, and of Mr. Ranyard. I was also enabled to present some of the results of work in progress here at meetings of the Royal Astronomical Society at London, the Astronomische Gesellschaft at Vienna, and the Liverpool Astronomical Society. The most important result of my journey was the acquisition of copies of some valuable unpublished manuscripts. By the courtesy of Lady Herschel and of Lieutenant-Colonel John Herschel, I was permitted to examine the original manuscripts of Sir William Herschel's observations of the light of the stars. This led to the discovery of two unpublished catalogues, of which I was allowed to make a copy. The reduction of the four published catalogues by means of our photometric measures has already been mentioned in my last Report. The two additional catalogues furnish means for completing this work, so that we have now a most valuable determination of the light of all the stars in Flamsteed's Catalogue at a time when no other estimates of their light are known to exist. By the kindness of Professor Schönfeld, Director of the Bonn Observatory, I was permitted to make a copy of the unpublished observations of variable stars made by the late Professor Argelander after the publication of Volume VII. of the Bonn Annals. These manuscripts will be very valuable in connection with the bibliography to which reference has already been made.

PUBLICATIONS.

The printing of Volume XIV. of the Observatory Annals has gone on steadily during the year, the printers having constantly been supplied with copy.

The publications named below have appeared since the similar list in the last Report was drawn up, either as official communications from the Observatory, or as papers prepared by its officers individually.

Thirty-seventh Annual Report.

Statement of work done at the Harvard College Observatory during the years 1877–82. By Edward C. Pickering. Cambridge, 1882.

First Circular of Instructions for Observers of Variable Stars, acting in co-operation with the Harvard College Observatory, dated January 27, 1883.

Circulars relative to the Collection and Distribution of Astronomical Intelligence. Cambridge, 1883.

On the Telegraphic Transmission of Astronomical Data. Part ii. The Phrase Code.

Circular on Astronomical Photography, dated February 21, 1883.

Address by Professor Pickering at the June Meeting of the Royal Astronomical Society. The Observatory, vi. 199. Astronomical Register, xxi. 150.

Address by Professor Pickering at the Second Annual General Meeting of the Liverpool Astronomical Society. Abstract of Proceedings, 2. Astronomical Register, xxi. 278.

The Wedge Photometer. By Edward C. Pickering. Proc. Am. Acad. of Arts and Sciences, xvii. 231.

Observations of the Transit of Venus, December 5 and 6, 1882, made at the Harvard College Observatory. Edward C. Pickering, Director. Id. xviii. 15.

On a Method of determining the Index Error of a Meridian Circle at any Instant, depending upon the observed Polar Distance of Polaris. By W. A. Rogers. Id. xviii. 284.

Studies in Metrology. By W. A. Rogers. Id. xviii. 287.

On the Reduction of Different Star Catalogues to a Common System. By W. A. Rogers. Id. xviii. 399; Astronomische Nachrichten, cvi. 257.

A Study of the Centimeter marked "A," prepared by the U. S. Bureau of Weights and Measures for the Committee on Micrometry. By W. A. Rogers. Proc. Am. Soc. of Microscopists, 1883, p. 184.

A Critical Study of the Action of a Diamond in ruling Lines upon Glass and Metals. By W. A. Rogers. Id. p. 149.

Note on Probable Errors. By W. A. Rogers. Id.

Vice-President's Address on the German Survey of the Northern Heavens. By W. A. Rogers. Proc. Am. Assoc. for the Advancement of Science, 1883, p. 53.

Results of Tests with the Almucantar in Time and Latitude. By S. C. Chandler, Jr. Id. (Also Sidereal Messenger, ii. 269.)

Mountain Observatories. By Edward C. Pickering. Appalachia, iii. 99. The Observatory, vi. 287.

On the Orbit of the Great Comet. By S. C. Chandler, Jr. Astronomische Nachrichten, ciii. 347.

On the Orbit of the Great Comet. By S. C. Chandler, Jr. Id. ciii. 381.

Elements of Comet 1882, I. By O. C. Wendell. Id. civ. 287.

Elements and Observations of the Comet 1883, Brooks-Swift. By S. C. Chandler, Jr. Id. cv. 127.

Ephemeris of Comet 1883, Brooks-Swift. By John Ritchie, Jr. Id. cv. 143.

On the Variability of 36 (Uran. Argentina) Ceti. By S. C. Chandler, Jr. Id. cv. 333.

New Planetary Nebulae. By Edward C. Pickering. Id. cv. 335.

Erratum in the Position of a Variable Star. By Edward C. Pickering. Id. cv. 351.

Observations of Comet 1883, I. (Brooks-Swift) at Harvard College Observatory. By S. C. Chandler, Jr. Id. cvi. 9.

A convenient Method of finding or identifying an Asteroid. By O. C. Wendell. Id. cvi. 205.

Date of Discovery by Brooks of Pons' Comet. By John Ritchie, Jr. Id. cvii. 43.

On the Outburst in the Light of the Comet Pons-Brooks, September 21–23. By S. C. Chandler, Jr. Id. cvii. 131.

It is evident that the present rapid accumulation of results will soon involve an important question regarding their publication. The funds especially provided for this purpose will prove entirely inadequate, and the application to this purpose of the unrestricted funds of the Observatory must be considered. This subject will probably be more fully treated in my next Annual Report.

EDWARD C. PICKERING, *Director.*

To the President of the University:

Sir, — I have the honor to submit the following report on the condition and progress of the Arnold Arboretum during the year ending August 31, 1883: —

The negotiations between the College and the city of Boston for their joint occupancy of the Arboretum as a public park were concluded on the 30th day of December. On that day an Indenture (see Appendix), signed by the President of the University, and the Park Commissioners of Boston, was executed. Under this indenture the city agreed to lease to the College for 999 years, with the right of renewal, at a nominal rent, the portion of the original Arboretum grounds not needed for parkways and roads, the Park Commissioners having previously laid out the Arboretum as a public park. Nearly twenty acres of ground adjoining the College property and purchased by the city of Boston for the purpose were included in the lease, which is made contingent upon the fulfilment of various conditions by the two parties.

It is believed that this arrangement will be of great mutual benefit to the Arboretum and the city of Boston. Under its provisions the property of the College in the Arboretum is freed from all danger of taxation, and is relieved of the possibility of encroachment by any railroad, tramway, or public street.

The city binds itself to expend within a reasonable time the sum of $75,000 in building roadways through the Arboretum upon a plan previously agreed upon. It agrees, further, to maintain these roadways in a proper manner during the term of the lease, and to protect them and the Arboretum itself from injury by a suitable police.

The College agrees that the Arboretum shall be open for the instruction and use of the public at all reasonable hours. The control and arrangement of the Arboretum, with the exception of the roadways, rests in the hands of the President and Fellows. The scientific development of the Arboretum, therefore, will not be affected by this arrangement, while its usefulness as a means for popular instruction must be greatly increased.

Under this agreement, the construction of the roads was begun by the city early in July, and has been steadily continued.

The great accumulation of plants in the nurseries has necessitated their further enlargement, and nearly two acres have been added to the nursery grounds. Such plants as required moving have been transplanted, and the large collections of plants are in a satisfactory and flourishing condition.

In my last Report I called attention to the new system introduced into the Arboretum for preserving by means of a card catalogue a record of the collection of living plants. The plan has been found to work satisfactorily, and the whole nursery collection has been renumbered and relabelled during the year, to conform to it. The collection is now represented by 2,542 cards.

The interchange of plants and seeds with other botanical and horticultural establishments has been continued during the year. There have been 7,841 plants (including cuttings and grafts) and 21 packets of seeds distributed as follows: to all parts of the United States, 6,431 plants and 1 packet of seeds; to Great Britain, 24 plants and 5 packets of seeds; to the Continent of Europe, 262 plants and 15 packets of seeds; to Algeria, 100 plants.

There have been received during the year, 7,821 plants (including cuttings and grafts) and 98 packets of seeds, from 22 donors.

HERBARIUM AND MUSEUM.

The ordinary work of the Herbarium and Museum has been continued during the year. There have been added to the Herbarium, 3,827 sheets of dried plants; of these, 927 sheets contain North American species, and 2,900 sheets a collection of the ligneous plants cultivated in Europe and prepared at the Royal Garden, Kew, for the Arboretum.

During the year, the Report upon the Forests of the United States, prepared by the Director, in connection with the 10th Census, has been completed. The botanical drawings of the trees of North America for the Government of the United States, have been continued by Mr. Faxon, who has also been engaged in the arrangement of a special herbarium, illustrating North American trees, to accompany the exhibit of forest products which Mr. Morris K. Jesup is now forming in New York, under my general direction, in connection with the American Museum of Natural History.

As a member of the Northern Transcontinental Survey, the Director devoted the months of July and August to an examination of the composition and distribution of the forests of the Rocky Mountains in Northern Montana.

C. S. SARGENT, *Director.*

To the President and Fellows of Harvard College:

I have the pleasure of reporting that during the past year the latest addition to the Museum building has been completed. The transfer of the students to their new quarters has been effected, and the whole building is now occupied as originally planned. The rooms in this addition are devoted mainly to Laboratories, to the Library, Lecture Room, and Curator's Room, only such space being reserved for exhibition as was necessary to connect the general exhibition rooms with those of the main body of the building, hereafter to be erected.

Ten years wanting only a few weeks have passed since the care of the Museum devolved upon me. Some account is due here of the work done during that decade, and of the present state of the Museum as compared with its condition at the close of 1873. At that time, and indeed far earlier, from the very beginning of the institution, the general plan was sketched out in the mind of its founder. But the difficulties involved in the initiation of so large an undertaking prevented Professor Agassiz from developing his schemes. From want of rooms and of means for proper distribution, the immense accessions constantly accumulating upon his hands invaded, little by little, the space devoted to special objects. It became evident, at the time of his death, that nothing short of a radical rearrangement of the collections could bring out his plans and give them distinct expression. This rearrangement has been completed only within the past year, and no sign of the former confusion, due to a too rapid accumulation of material, is left.

At the close of 1873 the Museum building covered about 9,400 square feet of ground, and was filled to overflowing, from attic to basement, with the collections brought together by its first Director. The buildings and collections then represented an expenditure of about $200,000. From that time to the past Academic year the new buildings and collections represent an additional expenditure of more than $500,000, in addition to the current expenditure. The ground covered by the additional building measures about 9,500 square feet. The resources at the disposal of the Director in 1873 came from the income of invested funds amounting to about $185,000. At the present moment, these amount to over $580,000. Ten years ago our departmental Library numbered some 5,000 volumes. Since that time it has increased to 16,000 volumes.

The temporary quarters provided for the instruction then given at the Museum afforded no facilities for the more accurate work now required in many branches of the Biological and Geological Departments. Although our present laboratories, still in their first year of service, are not equipped as I hope to see them, they afford even now ample facilities for instruction and investigation, as compared with those heretofore available at Cambridge.

The publications of the Museum, giving the results of investigations by specialists or by Assistants of the Museum, the materials for which have been drawn from our collections, have been rapidly issued. Volumes IV. to X. of the Bulletins, and Volumes IV. to IX. of the Memoirs, have been published during the last ten years.

Already, in 1853, the late Edward Forbes saw the importance of geographical displays as applied to the geological structure and products of the colonies of Great Britain, in connection with the Jermyn Street Museum of Practical Geology. He protested against the simple and single systematic arrangement, as not covering the ground necessary to make the Museum practically useful. He further dwelt on the fact, that a museum as such, not connected with an educational institution, was of very little use to the public beyond its value as a cyclopædia of reference.

We have attempted to build up an institution of that kind, and under our present conditions it is now possible to form some idea of the success of the Museum of Comparative Zoölogy, based as it is upon a plan essentially different from that of other like institutions. Our Exhibition Rooms, for instance, are comparatively small, each one devoted to a special subject, but so combined that, when taken together, they illustrate the animal kingdom as a whole in its general relations, and in its geographical and palæontological range and distribution. They are intended not only to meet the wants of the public at large, and of beginners as well as of more advanced university students, but also to promote research by giving assistance to specialists and original investigators. Meanwhile, the work of the Museum proper should be in charge of Assistants whose duties are so arranged as to leave a good part of their time free for original research; the Museum as a whole forming an important branch of the Natural History Department of the University, with which its Assistants and Professors are intimately connected.

An enumeration of the contents and uses to which our space is devoted will give a better idea of our aims than a lengthy description.

EXHIBITION ROOMS.

Synoptic Room:—
  Synopsis of the Animal Kingdom, living and fossil.
Five Systematic Rooms:—
  Mammalia.
  Birds.
  Fishes.
  Mollusca.
  Radiates and Protozoa.

And their Galleries for the Systematic Collections of Reptiles, Insects, and Crustacea.

Seven Faunal Rooms and Galleries:—
  North American.
  South American.
  African, including Madagascar.
  Indian.
  Australian.
  * Europeo-Siberian.
  * Atlantic.
  * Pacific.

Four Rooms for the Palæontological Collections.

Two Rooms for the Palæozoic, one for the Mesozoic, and one for the Tertiary:—
  * The Silurian and Devonian.
  * The Carboniferous and Jura.
  * The Cretaceous.
  * The Tertiary.

The Work Rooms for the Assistants of the Museum, and the Storage Rooms, which are also intended as work rooms of their special subjects, are distributed as follows, in addition to a large Receiving Room and a general workshop.

The Alcoholic Collections stored in the basement occupy:—
  Four Rooms devoted to Fishes.
  Two Rooms for Fishes and Reptiles.

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* Not yet opened to the public.

One Room for Birds and Mammals.
One Room for Mollusca.
One Room for Crustacea.
One Room for the other Invertebrates.

The Entomological Department is to occupy eventually four gallery rooms of the first story.

The Work Rooms and Storage Rooms of the fifth story are filled by collections occupying: —

Five Rooms devoted to Birds and Mammals; three for skins and eggs, and two for skeletons.
One Room for Crustacea.
One Room for Mollusca.
One Room for Fish and Reptile Skeletons.
One Room for the Collection of dry Invertebrates (Corals, Echinoderms, Sponges, etc.).
Two Rooms for Fossil Vertebrates exclusive of Fishes.

The remaining Palæontological Collections are crowded into four Work and Storage Rooms.

Two Work Rooms for the Geological and Lithological Department.

Four Rooms are devoted to the Library of the Museum, and one Room for the office of the Curator.

There are also: —

A large general Lecture Room.
Three Laboratories for Students in Biology.
Three Laboratories for Students in Geology and Palæontology, with two smaller private rooms for the Instructors.

With the Biological Laboratories will be connected also a large Room for an Aquarium for both fresh-water and marine animals, and another room for a Vivarium, both of which are in the basement of the building.

This will give us, in all, seventeen rooms devoted to the exhibition of collections for the public; ten work and storage rooms in the basement, for the Alcoholic Collections; thirteen work and storage rooms for the dry Zoölogical Collections; eight similar rooms for the Palæontological and Geological Collections; and thirteen rooms devoted to the Laboratories, Lecture Rooms, and Library connected with the instruction given at the Museum. The arrangement being such that whenever any Departments, as, for instance, the Geological and Geographical, or the Anatomical, or any other, outgrow their present quarters, room can be made for them, by extensions of the building, for a long time to come, without interfering with the plans which have been carried out thus far.

In adopting a small unit for the size of our rooms (30 × 40 ft.), we deliberately abandoned all attempts at Exhibition Rooms imposing from their size. We have aimed only to place before the public such portions of our collections as shall become instructive; and in our storage and work rooms the appliances for storage aim at economy of space, and are intended, while they do not neglect the careful preservation of the Collections, to give to the Assistants and students the freest and quickest possible access to them.

During the past summer the following persons pursued their studies at my Newport laboratory: — Mr. Fewkes, one of the Museum Assistants, who devoted his time principally to embryological studies of Annelids, Messrs. Barnes and Tuttle of the Scientific School, and Miss E. A. Nunn, who devoted her time to the study of the earlier stages in the development of Brachyura. Prof. C. O. Whitman took up the study of the early stages of some of the many species of pelagic fish-eggs, so common at Newport; and he is preparing in connection with me a preliminary report on his work, some of which is in continuation of investigations on the early stages of the bony fishes, begun nearly twenty years ago.

The course in Biology, given by Professors Farlow and Faxon, was attended by two Seniors, seventeen Juniors, four Sophomores, and one special student. Mr. G. W. Perkins assisted Professors Farlow and Faxon in the laboratory work of the course.

In Advanced Zoölogy, the course of Professor Faxon was followed throughout the year by thirteen Seniors, four Juniors, and one student from the Scientific School.

During the past Academic year lectures in General Zoölogy were given by Dr. Mark to 104 students, of whom 39 were Seniors, 34 Juniors, 25 Sophomores, 2 Freshmen, 2 Unmatriculated, and 2 Scientific Students.

In Dr. Mark's course on Embryology, the lectures were attended by three fourth-year students of the Lawrence Scientific School. The laboratory work was pursued by the three students attending the lectures, and by another who had previously attended the same course. The work consisted largely in the investigation of special topics proposed by the instructor at the beginning of the year.

These studies have resulted in the production of the following papers: —

1. On the Development of Œcanthus niveus, and its Parasite, Teleas. By Howard Ayers. Mem. Bost. Soc. Nat. Hist., Vol. III. No. 8.

2. On the Development of the Posterior Fissure of the Spinal Cord, and the Reduction of the Central Canal, in the Pig. By William Barnes.

3. Notes on the Development of Phryganidæ. By William Patten.

4. The Relation of the External Meatus, Tympanum, and Eustachian Tube to the First Visceral Cleft. By Albert H. Tuttle, of Boston.

The papers of Messrs. Barnes and Tuttle are in press in the Proceedings of the American Academy of Arts and Sciences.

Professor Shaler and Mr. W. M. Davis gave the usual courses, as follows: —

In Physical Geography, attended by sixty students. (Mr. Davis.)

In Elementary Geology, with field-work, attended by one hundred and eighty-five students. (Prof. Shaler and Mr. Davis.)

A course in Advanced Geology, with field work, attended by twenty-five students. (Prof. Shaler and Mr. Davis.)

A course in Palæontology, attended by seven persons. (Prof. Shaler.)

Professor Whitney lectured twice a week on Applied Geology, throughout the year. He was assisted in this course by Dr. Wadsworth, who also gave a course of lectures on Advanced Lithology, and took charge of the instruction of a small class of special students in Microscopic Lithology.

About five hundred volumes have been added to the Library of the Museum during the past year.

A special list of the Museum publications during the last Academic year is given in Appendix A of this Report. They consist of four numbers of the Memoirs, and of fifteen numbers of the Bulletin. The publications issued elsewhere by several specialists, based mainly upon Museum materials, are mentioned in the special Reports of the Assistants of the Museum. The other publications of the Professors and Assistants of the Museum are noted in the Reports of the different Departments.

The larger number of the publications of the Museum are devoted to Reports on the collections made by the "Blake." These consist of: —

A Report on the Stalked Crinoids collected by the "Blake" in the Caribbean, by Mr. P. H. Carpenter. Bull. M. C. Z., X., No. 4. 16 pp. December, 1882.

A Preliminary Report on the Fishes of the "Blake," collected during the Summer of 1880, along the Atlantic Coast of the United States, by Prof. B. G. Goode and Dr. Tarlton H. Bean. Bull. M. C. Z., X., No. 5. 37 pp. April, 1883.

A Report on the Ophiuridæ of the "Blake," by Theodore Lyman. Bull. M. C. Z., X., No. 6. 50 pp. 8 plates. May, 1883.

A Preliminary Report on the Anthozoa, by Prof. A. E. Verrill. Bull. M. C. Z., XI., No. 1. 72 pp. 8 plates. July, 1883.

A Report on the Isopods, by Oscar Harger. Bull. M. C. Z., XI., No. 4. 14 pp. 4 plates. September, 1883.

In connection with the explorations of the Gulf Stream by the Coast Survey, a Report on the Medusæ of the Bermudas, by J. Walter Fewkes. 10 pp. 1 plate.

Vol. X. No. 3 of the Bulletin contains a paper by Dr. Harrison Allen on the Ethmoid Bone in the Mammalia. 27 pp. 7 plates. November, 1882.

Of the seventh volume, the first of the Geological Series, three numbers have been published: —

No. 8, a short paper by Prof. Lesquereux, On some Permian Fossil Plants from Colorado. 4 pp. October, 1882.

Nos. 9 and 10, by Mr. W. M. Davis: On the Triassic Traps and Sandstones of the Eastern United States. 59 pp. 3 plates. On the Lower Helderberg Limestones east of the Catskills. 20 pp. 2 plates. January, 1883.

Professor Whitney has published the third and concluding part of the Climatic Changes, Vol. VII. No. 2, Part III. Mem. M. C. Z., pp. 265–394. October, 1882.

I have myself published the following: —

A short paper entitled, A Chapter in the History of the Gulf Stream. Bull. M. C. Z., XI., No. 2. 5 pp.

The First Part of a Memoir on the Porpitidæ and Velellidæ of the Gulf Stream. Mem. M. C. Z., Vol. VIII. No. 2. 16 pp. 12 plates.

Selections from Embryological Monographs, containing the Echinodermata. Vol. IX. No. 2, Mem. M. C. Z. 45 pp. 10 plates. July, 1882.

The First Part of the Report on the Echini of the "Blake." Vol. X. No. 1, Mem. M. C. Z. 126 pp. 32 plates. September, 1883.

I have in addition published in the Memoirs of the American Academy, June, 1883, Vol. X., a paper on the Tortugas and the Florida Reefs, 27 pp., 8 maps, 4 plates, from observations made while on the "Blake," and while engaged in studying the surface fauna of the Gulf Stream under the auspices of the Coast Survey.

The last volume of the Transactions of the Royal Society of London, contains a memoir by the late Prof. F. M. Balfour and Mr. W. N. Parker, on the structure and development of Lepidosteus, based upon material sent them from the Museum.

Some progress has been made in the arrangement of the Exhibition Rooms. The Indian, the African, and the Australian faunal collections are now accessible to the public, although they yet are far from complete. The Systematic Collection of Birds has undergone a final arrangement, and the storage rooms devoted to the Radiates, the collections of fish and reptile skeletons, and the Crustacea, are now filled with their respective collections.

Mr. Garman has continued the explorations made by him in previous years in the West, and he and his assistants have sent us valuable additions to our collections of Mammalian and Reptilian fossil remains. We have specially to thank the Secretary of War, the Hon. R. T. Lincoln, and the Secretary of the Interior, the Hon. H. M. Teller, for the letters of introduction they kindly sent for the use of Mr. Garman while in the Territories.

The principal collections purchased were received from Prof. H. A. Ward of Rochester, and Mr. E. Häberlein, who sent us a second collection of Solenhofen fossils. An extensive collection of fossil fishes for the Lower Carboniferous, brought together by Mr. Thomas Stock of Edinburgh, has also been purchased for the Museum.

I hope during the coming winter to be able to move the collections of fossils now stored in the attic to their final storage rooms, and to make a beginning in the arrangement of the Palæontological Collections intended for exhibition.

ALEXANDER AGASSIZ, *Curator.*

CAMBRIDGE, October 1, 1883.

APPENDIX.

I.

Indenture between Harvard College and the City of Boston concerning the use of the Arnold Arboretum as a Public Park.

This Indenture made the thirtieth day of December, in the year eighteen hundred and eighty-two, between the City of Boston, a Municipal Corporation in the Commonwealth of Massachusetts (hereinafter called the City), of the one part and the President and Fellows of Harvard College, a corporation established by the laws of Massachusetts (hereinafter called the College), of the other part.

Whereas, the Board of Park Commissioners of the City of Boston, by virtue of the authority conferred upon said Board by Chapter one hundred and eighty-five of the Acts of the Legislature of Massachusetts of the year 1875, and by the City Council of said City of Boston, by a certain written instrument of even date herewith to be recorded with the Suffolk Registry of Deeds, have taken and located as and for a public park that tract of land in that part of said city known as West Roxbury held by the College and by it dedicated to the use of the Arnold Arboretum, so called, together with certain adjoining tracts the property of other persons deemed by said Commissioners convenient and necessary for use in connection therewith, for the purposes and under the powers and limitations set forth in said Act and Acts in addition thereto and amendment thereof.

And whereas, by an act of the General Court of Massachusetts passed on the twenty-ninth day of March, in the year 1880, it was enacted that in case the said Board of Park Commissioners deemed it desirable so to take the said lands for the said purposes, the City was thereby authorized to lease such portions of the said Arboretum and adjoining tracts so taken, as the said Board of Commissioners might deem not necessary for use as park ways and grounds to the College, to be held to the same uses and purposes as the said Arboretum was then held under the trusts created by the wills of Benjamin Bussey and of James Arnold, and for such a term and upon such mutual restrictions, reservations, covenants, and conditions as to the use thereof by the public in connection with the uses of the same under the said trusts, and as to the rights, duties and obligations of the contracting parties as might be agreed upon between the said Commissioners and the College. And the Board of Park Commissioners on the part of the City and the president on behalf of the College were respectively authorized to execute and deliver the said lease.

And whereas, the said Board of Park Commissioners deems such portion of the said Arboretum and adjoining tracts as is hereinafter described and leased to be not necessary for use as park ways and grounds and considers that the same will be better and more advantageously enjoyed and used by the public as a part of the said park if the same be leased to the College for the purposes of the said trusts and upon such terms and subject to such provisions with regard to the use thereof by the public as are hereinafter contained. And it has been agreed between the said Commissioners and the College that the same be leased to the College for the term and upon the mutual restrictions, reservations, covenants, and conditions hereinafter expressed.

Now this Indenture witnesseth that the City by virtue and in exercise of the power and authority given to it by the said act and of every other power and authority it hereto enabling doth demise and lease unto the College all that parcel of land delineated on a plan entitled "The Arnold Arboretum," and to be recorded herewith in the Suffolk Registry of Deeds situate in that part of Boston known as West Roxbury and bounded and described as follows: — Beginning at a point on the northerly line of South Street at land of the President and Fellows of Harvard College, and running thence northwesterly on said land by two lines 259 feet and $282\frac{94}{100}$ feet; thence turning and running in a general westerly direction on said land of said President and Fellows by several lines $457\frac{14}{100}$ feet, $343\frac{59}{100}$ feet, $60\frac{15}{100}$ feet, $145\frac{20}{100}$ feet, $140\frac{20}{100}$ feet, $202\frac{1}{100}$ feet, and $461\frac{92}{100}$ feet, thence turning and running on said last mentioned land in a general southeasterly direction by several lines $83\frac{29}{100}$ feet, $116\frac{71}{100}$ feet, $107\frac{80}{100}$ feet, and $251\frac{37}{100}$ feet to South Street, thence turning and running southwesterly by a curved and broken line on said South Street $1408\frac{37}{100}$ feet to Bussey Street, thence turning and running northwesterly on said Bussey Street $1981\frac{57}{100}$ feet to Walter Street, thence turning and running northerly on said Walter Street $240\frac{37}{100}$ feet, thence turning and running northeasterly by three lines on land of Caroline E. Skinner and Freelove S. Kent, $272\frac{64}{100}$ feet, $357\frac{17}{100}$ feet, and $242\frac{94}{100}$ feet; thence turning and running northwesterly on said land of Kent $350\frac{80}{100}$ feet to Centre Street, thence turning and running northeasterly on said Centre Street $1409\frac{97}{100}$ feet, thence turning and running southeasterly 200 feet, thence northeasterly 100 feet, thence easterly $369\frac{56}{100}$ feet, thence northeasterly $200\frac{8}{100}$ feet, thence northwesterly $493\frac{29}{100}$ feet, thence northeasterly $755\frac{75}{100}$ feet, thence northwesterly 130 feet, the last seven boundaries being on land of The Adams Nervine Asylum, thence turning and running northeasterly on land of said Asylum, and on lands now or formerly of Edward K. Butler, William H. Goodwin, George W. Richards, and William Minot, Jr., Trustee, $1020\frac{26}{100}$ feet to Centre Street, thence turning and running southeasterly on said Centre Street $126\frac{53}{100}$ feet, thence turning and running southwesterly by a curved line of $28\frac{58}{100}$ feet radius 45 feet, thence southerly by another curved line of $157\frac{85}{100}$ feet radius $68\frac{89}{100}$ feet, thence by another curved line $322\frac{59}{100}$ feet radius $97\frac{63}{100}$ feet, thence southeasterly by a straight line $91\frac{20}{100}$ feet, thence southerly by a curved line of $1011\frac{61}{100}$ feet radius $490\frac{14}{100}$ feet, thence southwesterly by another curved line of $747\frac{89}{100}$ feet radius $307\frac{65}{100}$ feet, the last six boundaries being on land of George W. Goldsmith and his heirs; thence southwesterly by a straight line on land now or formerly of Robert and Fred Seaver $217\frac{80}{100}$ feet, thence southwesterly by a straight line $1\frac{8}{10}$ feet, thence southerly by a curved line of $354\frac{60}{100}$ feet radius $427\frac{43}{100}$ feet, thence southeasterly by a straight line $218\frac{64}{100}$ feet, the last three boundaries being on land of Sophia A. Smith and her heirs, thence continuing on the same line southeasterly $524\frac{27}{100}$ feet, thence by a curved line of $387\frac{34}{100}$ feet radius $172\frac{85}{100}$ feet, thence southeasterly by a straight line 50 feet, thence by a curved line of $859\frac{92}{100}$ feet radius $435\frac{25}{100}$ feet, thence southeasterly by a straight line $60\frac{15}{100}$ feet, thence by a curved line of $529\frac{69}{100}$ feet radius $41\frac{59}{100}$ feet, thence by another curved line of 175 feet radius $45\frac{80}{100}$ feet, thence easterly by another curved line of $17\frac{73}{100}$ feet radius $35\frac{94}{100}$ feet, to South Street; the last eight boundaries being on land of Arthur W. Austin, thence turning and running southerly and southwesterly on South Street $422\frac{80}{100}$ feet, to the point of beginning containing $167\frac{44}{100}$ acres more or less.

Excepting and always reserving out of these presents all those parts of said lands delineated and marked on said plan as driveways and parkways, and those parts of the same lands delineated and marked A. and B. respectively on the said plan.

And granting with the premises hereby leased a free and unobstructed right of way upon and over all the said excepted parts of the said lands and upon and over the driveways and parkways delineated on the said plan, and so marked thereon.

To have and to hold the premises hereby leased (hereinafter called the Arnold Arboretum) unto the College and its successors and assigns for the term of One Thousand Years from the date hereof without impeachment of waste upon and for the same trusts, uses and purposes as those upon and for which the said land held by the College for the purposes of the said Arboretum at the said time of the passing of the said act of the year 1880, was then held under the will of Benjamin Bussey and the will of James Arnold and a certain indenture dated the 29th day of March in the year 1872, and made between George B. Emerson, John J. Dixwell and Francis E. Parker, as trustees of the will of the said James Arnold of the one part, and the College of the other part, in which indenture the trusts provided for in the said will of James Arnold are declared in pursuance of the directions in the said will contained, yielding and paying therefor during the said term the yearly rent of one dollar.

And the City covenants with the College, its successors and assigns that the College and its successors and assigns shall peaceably hold and enjoy the premises hereby leased during the said term without any interference or control of the City or any person claiming through or under it. That the City will at all times save and keep harmless and indemnified the College and its successors and assigns, and keep the premises hereby leased free and discharged of and from all taxes and assessments of every description which during the said term may be assessed or payable in respect of or charged upon the premises hereby leased or any part thereof.

That the City will within a reasonable time make and finish fit for use of good sound materials and in a proper and workmanlike manner the driveways of which the sites and dimensions are delineated on the said plan and so marked thereon; but at a cost not exceeding seventy-five thousand dollars, and that the said driveways during the said term shall be repaired and maintained in a proper and substantial manner free of all charge and expense to the College and its successors and assigns. That the City will during the said term provide and maintain a proper and sufficient police in and about the Arboretum and the said parts excepted from these presents and the said roads, avenues, and parkway for the preservation of order and good conduct and the observance of the rules hereinafter mentioned or provided for. That no public street or highway and no steam or horse railway, or construction for like purposes shall be laid out through or over any part of the Arnold Arboretum except in such places if any and in such manner as the Park Commissioners and the College shall approve. That if the water supply from the sources within the Arnold Arboretum which the College has heretofore enjoyed for use in the said Arboretum shall at any time be cut off, interrupted, or impaired by the City or its assigns the City will immediately provide at its own charge and expense an equal or superior supply of water for the like uses. And that if the College, its successors or assigns shall be desirous of taking a renewed lease of the said premises for the further term of one thousand years from the expiration of the term hereby granted, the City or its assigns will upon the request and at the expense of the College, its successors or assigns and upon its or their executing and delivering to the City or its assigns a counterpart thereof, forthwith execute and deliver to the College its successors, or assigns a renewed lease of the said premises for the further term of one thousand years at the same yearly rent and upon and subject to the same restrictions, reservations, covenants, and conditions as are herein contained including the present covenant and so on from time to time forever. And the College for itself and its successors and assigns covenants with the City that the College will not commence or prosecute any action, suit or other proceeding against the City for the enforcement or recovery of any damages or claim which the College may have or be entitled to against the City by reason of the said taking of the said Arboretum land by the City. And that the Arnold Arboretum shall at all reasonable times be open to the inspection of the public as a part of the said Park subject to the rules hereinafter mentioned or provided for. *Provided* always and it is hereby declared that the City shall be at liberty to erect and maintain suitable gateways for entrance thereto upon any of the said excepted parts and to maintain gates there. And that no pavilion, kiosk, urinal, museum, greenhouse, stable, shed or other building (except as above provided) shall be erected or maintained within the Arnold Arboretum, or in any of the said excepted parts or in any of the said driveways or parkways without the prior consent of the Park Commissioners and the College. *Provided* also and it is hereby declared and agreed that the use of the Arnold Arboretum and of the said excepted parts and of the said roads, avenues, and parkways by the City and its assigns and the College its successors and assigns and the public, shall be subject to the rules contained in the schedule hereto annexed and to such additional rules as have been or may from time to time be agreed upon between the Park Commissioners and the College. But any of the said rules may be altered or annulled by agreement between the Park Commissioners and the College.

In witness whereof the City by its Board of Park Commissioners and the College by its President have hereto set their respective corporate seals, and caused these presents to be signed acknowledged and delivered in their name and behalf by the said Commissioners and the said President the day and year first above written.

Seal of the City of Boston.

The City of Boston by
CHAS. H. DALTON,
WM. GRAY, JR.,
HENRY LEE,
The Board of Park Commissioners of the City of Boston.

Seal of Harvard College.

President and Fellows of Harvard College, by
CHARLES W. ELIOT,
President.

COMMONWEALTH OF MASSACHUSETTS.

Suffolk, S.S., December 30, 1882. Then personally appeared Charles H. Dalton, William Gray, Jr., and Henry Lee, Board of Park Commissioners of the City of Boston, and acknowledged the foregoing instrument to be the free act and deed of the said City, and personally appeared Charles W. Eliot, President, and acknowledged the foregoing instrument to be the free act and deed of the President and Fellows of Harvard College before me

EDWARD P. NETTLETON,
Justice of the Peace

The Schedule referred to in the above written Indenture.

RULES.

1. The Arnold Arboretum shall be open to visitors daily from 7 o'clock A.M. until sunset.

2. No hawker, peddler, or huckster or other person offering or exposing for sale any goods or wares shall be allowed in the Arboretum or in any of the roads, avenues, or parkways within its limits.

3. No military or civil encampment, parade, drill, review, procession, or other military or civil evolution, assemblage, entertainment, exercise or athletic game, or sport shall be had or performed within the Arboretum or in any of the said roads, avenues, or parkways except with the prior consent of the Park Commissioners and the Corporation of Harvard College. And no military body shall, except with such prior consent, enter or move in military order within the Arboretum, or in any of the said roads, avenues or parkways, except in case of riot, insurrection, rebellion, or war.

Duplicate has been recorded, with plan, in Suffolk Deeds, Lib. 1581, folio 502.

II.

SUMMARY OF STUDENTS IN THE UNIVERSITY AT THE BEGINNING OF THE ACADEMIC YEAR, 1882–1883.

College,		
Seniors	203	
Juniors	209	
Sophomores	207	
Freshmen	263	
		882
Unmatriculated Students		46
Lawrence Scientific School		25
Bussey Institution		7
Dental School		25
Medical School		229
Law School		131
Divinity School		27
Candidates for the degrees of A.M., Ph.D., and S.D.		48
Holders of Fellowships		8
Resident Graduates not Candidates for a Degree		4
		1432

Persons who attended the Summer Courses in Science in 1883.

Chemistry	35
Botany	5
	40

Number of Certificates issued to Women in 1883.

Advanced Examination (Old Method)	1
Final Examination (New Method)	8
	9

III.

ACADEMIC HONORS FOR THE YEAR 1882–1883.

Commencement, June 27, 1883.

Orations.

John Hubbard Wilkins Edgerly,
Everett Wyman Sawyer,
Herbert Marshall Lloyd,
Robert Emmet O'Callaghan,
Charles Joseph Hubbard,
Arthur Richmond Marsh,
Edwin Guthrie McInnes,
Archibald Livingstone Hodges,
Charles Hall Grandgent.

Dissertations.

Walter Elijah Damon,
Walter Lincoln Burrage,
Patrick Michael Keating,
George Henry Heilbron,
Franklin Henry Hooper,
Luther Atwood,
Chokichi Kikkawa,
Arthur Lyman,
Samuel Norris,
George Ross Hewitt,
Benjamin Blake Holmes,
Arthur Henry Woodbury,
Henry Barton Jacobs,
Thomas Washington Cowgill,
James Merrill Burch,
Stephen Herrick Knight,
George Emerson Lowell,
Charles Pomeroy Worcester,
Henry Lloyd Smyth,
John Henry Wigmore,
Louis Arthur Coolidge,
William Hussey Page,
James Newton Garratt,
Herbert Putnam,
Frank Warton Kaan,
Sumner Bass Pearmain,
Horace Binney,
Alfred Church Lane,
Joseph Randolph Coolidge,
Arthur Clark Denniston,
William Faxon,
George William Evans,
Albert Cameron Burrage,
Morris Loeb,
Francis Britain Fay,
Alphonso Adelbert Wyman,
Joseph Henry Sheffield,
Thomas Cogswell Bachelder,
Fletcher Ranney,
Mellen Woodman Haskell,
Frederick Nichols,
Angell Boss Babbitt,
Edward Cummings,
Edwin Cull Howell,
Frank Elwood Jennison.

Disquisitions.

Edward Knowles Butler,
James Hamlet Bolt Easton,
Charles Enoch Robinson,
Robert Berry Ennis,
Alonzo Wilder Pollard,
Percival James Eaton,
John Downer Pennock,
Richard Pearce Francis,
James Milton Hall,
George Henry Nichols,
Archibald Lowery Sessions,
Walter Edward Clifton Smith,
William Alvah Rublee,
William Lawrence Dana,
William Hall Williams,
Henry Francis Sears,
Henry Ransom Edwards,
Walter Everard Paul,
Frederic Gray Reed,
William Dunning Sullivan,
Ernest Sanford Jack,
Henry Bromfield Cabot,
George Scott Winslow,
James Atkins Noyes,
Paul Jones,
Charles Dexter Canterbury,
William Wendell Bryant,
Lucas Lee Baker,
Francis Lewis Clark,
Oscar Edward Perry,
Charles Francis Morse,
Sollace Mitchell,
Edward Everett Hale,
Howard Lilienthal,
John William Fox,
Richard Baker Wilcox,
William Edgar Nies,
Charles Sumner Hamlin,
William Tyler Lord,
William Wadsworth Wentworth,
Joseph Edwin Davis,
Charles Witherle Hooke,

Arthur Kingsbury Stone,
Henry Howland Crapo,
Walter Curtis,
Henry Martyn Hall,
Robert Gordon Butler,
Edward Perry Warren,
George Patrick Morris,
Ormond Gerald Smith,
Edmund Swett Rousmaniere,
Horace Elmer Sprague,
Louis Osborne Johnson,
Daniel Appleton White,
Augustus Mendon Lord,
John Farwell Moors,
Edward Twisleton Cabot,
Walter Reeves Dame,
Sabin Pond Sanger,
William Halsey Garrison,
Jeffrey Richardson Brackett,
Reuben Burnham Moffat,
Charles Ranlet,
George Dixwell Burrage,
Charles Edgar Lewis Wingate,
Joseph Lee,
George Ebenezer Howe,
Osgood Putnam,
Clarence Getchell.

HONORS AT GRADUATION.

In Ancient Languages.

Herbert Marshall Lloyd,	Highest Honors.

In Classics.

Archibald Livingstone Hodges,	Highest Honors.
Angell Boss Babbitt,	Honors.
Walter Alias Damon,	Do.
Frank Elwood Jennison,	Do.
Edwin Guthrie McInnes,	Do.
Joseph Henry Sheffield,	Do.
John Henry Wigmore,	Do.

In Modern Languages.

Charles Hall Grandgent,	Highest Honors.

In Philosophy.

Edward Cummings,	Honors.

In Political Science.

Robert Emmet O'Callaghan,	Highest Honors.
George Henry Heilbron,	Honors.

In History.

John Hubbard Wilkins Edgerly,	Highest Honors.
Everett Wyman Sawyer,	Do.
Charles Joseph Hubbard,	Honors.
Patrick Michael Keating,	Do.
Samuel Norris,	Do.

In Mathematics.

Mellen Woodman Haskell,	Honors.
Edwin Cull Howell,	Do.
Alfred Church Lane,	Do.

In Natural History.

Walter Lincoln Burrage,	Honors.
Henry Barton Jacobs,	Do.

HONORABLE MENTION AT GRADUATION.

Gwynn Murdoch Andrews. *History.*
Luther Atwood. *Natural History; Greek.*
Angell Boss Babbitt. *Greek; Latin; English Composition.*
Thomas Cogswell Bachelder. *German; Mathematics.*
Lucas Lee Baker. *Natural History.*
David Nevins Baxter. *German.*
Horace Binney. *History; English Composition.*
Jeffrey Richardson Brackett. *History; English Composition.*
William Wendell Bryant. *History; English Composition.*
James Merrill Burch. *History.*
Albert Cameron Burrage. *German; English Composition.*
George Dixwell Burrage. *History; Philosophy; English Composition.*
Walter Lincoln Burrage. *Natural History.*
Edward Knowles Butler. *History.*
Robert Gordon Butler. *History; English Composition.*
Edward Twisleton Cabot. *History; Greek; Latin.*
Henry Bromfield Cabot. *Political Economy.*
Charles Dexter Canterbury. *History.*
Francis Lewis Clark. *Natural History.*
Russell Sturgis Codman. *History.*
Joseph Randolph Coolidge. *German; Greek.*
Louis Arthur Coolidge. *History.*
Thomas Washington Cowgill. *English; Greek; English Composition.*
Henry Howland Crapo. *Philosophy.*
Edward Cummings. *History; Philosophy; English Composition.*
Walter Curtis. *Natural History.*
Walter Reeves Dame. *History.*
Walter Elijah Damon. *Greek; Latin.*
William Lawrence Dana. *Natural History.*
Arthur Clark Denniston. *History; Political Economy.*
George Garrett Dunn. *History.*
Morris Earle. *Natural History.*
James Hamlet Bolt Easton. *History.*
Percival James Eaton. *Chemistry; Natural History.*
John Hubbard Wilkins Edgerly. *History.*
Henry Ransom Edwards. *History.*
Robert Berry Ennis. *Natural History.*
George William Evans. *Physics; Mathematics.*
William Faxon. *Philosophy; History; English Composition.*
Francis Britain Fay. *Natural History; English Composition.*
John William Fox. *English Composition.*

Richard Pearce Francis. *Natural History.*
James Newton Garratt. *Chemistry; Natural History; Mathematics.*
Clarence Getchell. *Chemistry; Natural History.*
Charles Hall Grandgent. *French; German; English Composition.*
Edward Everett Hale. *History; Political Economy.*
Henry Martyn Hall. *Natural History.*
James Milton Hall. *History.*
Charles Sumner Hamlin. *English Composition; Political Economy.*
Mellen Woodman Haskell. *German; Mathematics; English Composition.*
George Henry Heilbron. *History; English Composition; Political Economy.*
George Ross Hewitt. *Philosophy; English Composition.*
Archibald Livingstone Hodges. *Greek; Latin; English Composition.*
Benjamin Blake Holmes. *German.*
Charles Witherle Hooke. *Chemistry.*
Franklin Henry Hooper. *History.*
George Ebenezer Howe. *History; English Composition.*
Edwin Cull Howell. *Latin; Mathematics: English Composition.*
Charles Joseph Hubbard. *History; English Composition.*
Ernest Sanford Jack. *Natural History.*
Henry Barton Jacobs. *Natural History.*
Frank Elwood Jennison. *Greek; Latin.*
Louis Osborne Johnson. *Natural History.*
Paul Jones. *History.*
Frank Warton Kaan. *Political Economy.*
Patrick Michael Keating. *History; Greek.*
Chokichi Kikkawa. *English Composition.*
Stephen Herrick Knight. *Chemistry; Natural History.*
Alfred Church Lane. *Mathematics.*
Howard Lilienthal. *Natural History.*
Herbert Marshall Lloyd. *Greek; English Composition.*
Morris Loeb. *Chemistry; English Composition.*
Augustus Mendon Lord. *English; English Composition.*
William Tyler Lord. *Natural History.*
George Emerson Lowell. *German; Greek; Latin.*
Arthur Lyman. *Philosophy; History.*
Edwin Guthrie McInnes. *Greek; History: Mathematics.*
Arthur Richmond Marsh. *Greek; English Composition.*
Sollace Mitchell. *Natural History.*
Reuben Burnham Moffat. *History.*
John Farwell Moors. *Philosophy.*
George Patrick Morris. *Greek.*
Charles Francis Morse. *German.*
Frederick Nichols. *History; English Composition.*
George Henry Nichols. *German; English.*
William Edgar Nies. *Philosophy; English Composition.*
Samuel Norris. *History: Political Economy.*
James Atkins Noyes. *Chemistry; Natural History.*
Robert Emmet O'Callaghan. *Philosophy; Political Economy.*

Walter Everard Paul. *Natural History.*
Sumner Bass Pearmain. *German; Natural History.*
John Downer Pennock. *Chemistry.*
Oscar Edward Perry. *Greek.*
Alonzo Wilder Pollard. *History.*
Herbert Putnam. *Latin; English Composition; Political Economy.*
Osgood Putnam. *Philosophy, English Composition.*
Charles Ranlet. *Philosophy.*
Fletcher Ranney. *History; English; English Composition.*
Frederic Gray Reed. *Chemistry; Greek.*
Daniel Merchant Richardson. *Italian; Spanish.*
Charles Enoch Robinson. *Fine Arts.*
Edmund Swett Rousmaniere. *Philosophy; English Composition.*
William Alvah Rublee. *French.*
Sabin Pond Sanger. *German.*
Everett Wyman Sawyer. *History; Political Economy; English Composition.*
Henry Francis Sears. *German.*
Archibald Lowery Sessions. *History.*
Joseph Henry Sheffield. *Greek; Latin.*
Ormond Gerald Smith. *French; English Composition.*
Walter Edward Clifton Smith. *Philosophy.*
Henry Lloyd Smyth. *Mathematics.*
Horace Elmer Sprague. *Greek; Latin.*
Arthur Kingsbury Stone. *History.*
William Dunning Sullivan. *Natural History.*
Alfred Tonks. *Chinese.*
William Wadsworth Wentworth. *Natural History.*
Daniel Appleton White. *Philosophy.*
John Henry Wigmore. *Greek; Latin; English Composition; Political Economy.*
Richard Baker Wilcox. *History; Political Economy; English Composition.*
William Hall Williams. *Philosophy.*
Charles Edgar Lewis Wingate. *English Composition; Political Economy.*
George Scott Winslow. *History.*
Arthur Henry Woodbury. *Greek; English Composition.*
Charles Pomeroy Worcester. *Chemistry; Natural History.*
Alphonso Adelbert Wyman. *Political Economy.*

SECOND-YEAR HONORS.

In Classics.

Juniors:	
Charles Francis Aiken,	Honors.
James Richard Jewett,	Do.
Francis James Riley,	Do.
Thomas Stanley Simonds,	Do.
Sophomores:	
Arthur Deloraine Corey,	Highest Honors.
Theodore Dunham,	Do.

Henry Theodore Hildreth,	Highest Honors.
Rollin North Larrabee,	Do.
Daniel William Lothman,	Do.
Thomas Aloysius Mullen,	Do.
Abner Ernest Strong,	Do.
Richard Aldrich,	Honors.
Clarence Walter Ayer,	Do.
Paul Shipman Drane,	Do.
John Hays Gardiner,	Do.
Charles Bertie Gleason,	Do.
William Leverett,	Do.
Edward Dudley Marsh,	Do.
George Read Nutter,	Do.
Frederic Eugene Puffer,	Do.
William Christopher Smith,	Do.
Andrew Henshaw Ward,	Do.
Edward Franklin Weld,	Do.
Edward Blake Young,	Do.

In Mathematics.

Juniors:	
George Andrew Stewart,	Highest Honors.
Sophomores:	
Hugh Henry Brogan,	Highest Honors.
George Fauntleroy Davidson,	Do.
William Morrow McInnes,	Do.
Arthur Gordon Webster,	Do.
Daniel Lyman Hazard,	Honors.
James Lee Mitchell,	Do.
Abner Ernest Strong,	Do.

IV.

PRIZES.

DETURS.

The following students received books, called "Deturs," from the foundation of Edward Hopkins, for excellence in scholarship: —

Freshmen of 1881–82.

Charles Bertie Gleason,
Thomas Aloysius Mullen,
Richard Aldrich.

Freshmen of 1882–83.

John Henry Huddleston,
Edmund Nathaniel Snyder,
Joseph Newell Palmer,
Charles Sumner Balcombe,
Walter Bowen Waterman,
Edward Everett Rankin,

George Rice Carpenter,
Hammond La Monte,
Eben Richards,
George Edwin Howes,
Nehemiah Samuel Kenison,
William Fogg Osgood,
Charles Thornton Libby,
Alfred Henry Lloyd,
Herbert Bacon Hutchins,
Myron Wallace Richardson,
Clarence Wright Smith,
Percy Gardner Bolster,
Thomas Hovey Gage,
Henry Edward Fraser,
Selwyn Lewis Harding,
Boylston Adams Beal,
John McKinstry Merriam,
Walter Thomas Clark,
Albert Augustus Gleason,
Frank Burr Mallory,
Fred Theodore Lincoln,
Binney Gunnison.

Bowdoin Prizes.

I.

George Pellew, of the Class of 1880, of the Law School.
George Lyman Kittredge, of the Class of 1882.
Charles Bingham Penrose, of the Class of 1881, Graduate Student in Physics.

II.

Heinrich Conrad Bierwirth, of the Class of 1884.
Edward Wheeler Frost, of the Class of 1884.
Lewis Edward Gates, of the Class of 1884.

III. *a*.

Arthur Richmond Marsh, of the Class of 1883.

III. *b*.

Philip Henry Goepp, of the Class of 1884.

IV.

Francis Britain Fay, of the Class of 1883.
Charles Alexander Whittemore, of the Class of 1885.

Boylston Prizes for Elocution.

First Prizes.

George Burnap Morison, of the Class of 1883.
Fred Leland Sawyer, of the Class of 1883.

Second Prizes.

George Russell Agassiz, of the Class of 1884.
Edwin Everett Jack, of the Class of 1884.
William Hussey Page, of the Class of 1883.

Lee Prizes for Reading.

Sophomores.

Howard Augustus Taylor,
James Henry Payne,
Herbert Bacon Hutchins,
Odin Barnes Roberts,
Henry Edward Fraser.

Freshmen.

Winthrop Tisdale Talbot, from Boston Latin School.
Franklin Elmer Ellsworth Hamilton, from Boston Latin School.
Livingston Boyd Stedman, from Roxbury Latin School.
Archibald Cary Coolidge, from Adams Academy.

V.

DEGREES.

Bachelors of Arts of the Class of 1883	205
Bachelors of Arts of former Classes	9
Bachelors of Divinity	6
Bachelors of Laws	19
Doctors of Medicine	73
Doctors of Dental Medicine	8
Bachelors of Science	5
Bachelor of Agriculture	1
Doctors of Philosophy	5
Masters of Arts	31

Honorary Degrees.

Doctors of Laws.

George Edward Ellis,
Francis Amasa Walker.

Doctor of Divinity.

Charles Babbidge.

VI.

COMMITTEES OF THE OVERSEERS FOR 1883.

To visit the University.

President of the Board of Overseers.
His Excellency the Governor.
His Honor the Lieutenant-Governor.
The President of the Senate.
The Speaker of the House of Representatives.
The Secretary of the Board of Education.
The Secretary of the Board of Overseers.
The Chairman of each of the Visiting Committees.

To visit the College. — On Government.

Charles R. Codman.
Edwin P. Seaver.
Edward E. Hale.
Theodore Lyman.
Henry Lee.
John Noble.
J. T. G. Nichols.
Waldo Higginson.
Le Baron Russell.
Moorfield Storey.
John Fiske.
James E. Cabot.
Richard M. Hodges.
Solomon Lincoln.
John T. Morse, Jr.

To visit the College. — On Languages.

Le Baron Russell.
Robert D. Smith.
Thomas W. Higginson.
John Noble.
Arthur Dexter.
W. B. Swett.
William J. Rolfe.
Charles P. Curtis.
Robert E. Babson.
Edward Edes.
Carl Wolff.
Lucius H. Buckingham.
Octavius B. Frothingham.
Thomas J. Cushing.
Francis A. Waterhouse.
Horatio G. Curtis.
Francis H. Peabody.
Henry W. Haynes.
Robert Hale Bancroft.
Francis Peabody, Jr.

To visit the College. — On Rhetoric and English Literature.

Moorfield Storey.
Charles R. Codman.
George B. Chase.
Roger Wolcott.
Henry W. Foote.
Charles P. Curtis.
Josiah Quincy, Jr.

To visit the College. — On History and Political Science.

John Fiske.
John T. Morse, Jr.
Alexander McKenzie.
Thomas W. Higginson.
Henry C. Lodge.
Edward G. Porter.
John O. Means.
James H. Means.
Russell Gray.
Abbott Lawrence.
Brooks Adams.

To visit the College. — On Philosophy.

James E. Cabot.
Alexander McKenzie.
Charles F. Adams, Jr.
Joseph B. Warner.
John O. Means.
John Fiske.

To visit the College. — On Mathematics, Physics, and Chemistry.

Edwin P. Seaver.
Daniel B. Hagar.
William Watson.
George V. Leverett.
J. D. Runkle.
Percival Lowell.
E. D. Leavitt, Jr.
Channing Whitaker.
Oliver Wadsworth.
Francis Blake, Jr.
Robert Amory.
Walter C. Cabot.

To visit the College. — On Natural History.

Richard M. Hodges.
Theodore Lyman.
William H. Niles.
Francis Skinner.
Edward T. Bouvé.
William Brewster.

To visit the College. — On Fine Arts and Music.

Henry Lee.
Charles C. Perkins.
S. L. Thorndike.
John S. Dwight.
William F. Apthorp.
Charles G. Loring.
Charles A. Cummings.
J. Francis Tuckerman.
W. P. P. Longfellow.
Robert Boyd.

To visit the Divinity School.

Edward E. Hale.
James F. Clarke.
Phillips Brooks.
Alexander McKenzie.
Edward H. Hall.
Artemas B. Muzzey.
Franklin Johnson.
Waldo Higginson.
Henry W. Foote.
Charles F. Dole.
Thomas Hill.
Arthur Brooks.
F. W. Holland.

To visit the Law School.

William G. Russell
John Lowell.
Leverett Saltonstall.
George O. Shattuck.
Darwin E. Ware.
William C. Endicott.
Robert D. Smith.
Francis E. Parker.
Solomon Lincoln.
Robert M. Morse, Jr.
Francis C. Barlow.
Peter B. Olney.
Charles C. Beaman, Jr.
Edmund Wetmore.

To visit the Scientific School, the Bussey Institution, the Peabody Museum of American Archæology and Ethnology, and the Museum of Comparative Zoölogy.

Morrill Wyman.
Theodore Lyman.
R. M. Hodges.
Stephen Salisbury.
John O. Sargent.
Henry P. Kidder.
Robert W. Hooper.
Abbott Lawrence.
Francis M. Weld.
Channing Whitaker.
Charles O. Thompson.
T. Jefferson Coolidge.
Alphonse Fteley.
Clemens Herschel.
Ernest W. Bowditch.
S. M. Felton.
Thomas C. Clarke.

To visit the Medical and Dental Schools.

Le Baron Russell.
Morrill Wyman.
Richard M. Hodges.
Samuel A. Green.
Joseph Sargent.
Frederic Winsor.
George C. Shattuck.
Hall Curtis.
Samuel L. Abbott.
Francis M. Weld.
Algernon Coolidge.
John C. Dalton.
Austin Flint.

To visit the Observatory.

James F. Clarke.
Charles R. Codman.
William Amory.
Amos A. Lawrence.
J. Ingersoll Bowditch.
John C. Palfrey.
George I. Alden.
Robert T. Paine.
Robert C. Winthrop.
Charles F. Choate.
Alvan Clark.
Frederic O. Prince.
Augustus Lowell.
J. Montgomery Sears.
Simon Newcomb.
T. Jefferson Coolidge.
Francis H. Peabody.

To visit the Library.

Samuel A. Green.
Phillips Brooks.
John Fiske.
John T. Morse, Jr.
John O. Sargent.
William W. Greenough.
Charles A. Cutter.
George W. Wales.
Charles C. Smith.
Samuel S. Green.
Stephen Salisbury, Jr.
Samuel Eliot.
Francis V. Balch.
Henry G. Denny.
Charles Deane.
Henry F. Jenks.
Mellen Chamberlain.
George Dexter.
John M. Brown.
Charles F. Adams, Jr.
Robert Grant.

To visit the Botanic Garden and Herbarium.

Leverett Saltonstall.
Fred. L. Ames.
William Boott.
John Cummings.
William Gray, Jr.
Augustus Lowell.
H. H. Hunnewell.
J. Warren Merrill.
Francis A. Osborn.
John C. Phillips.
Henry P. Walcott.
Henry W. Sargent.
Henry C. Lodge.
J. Pierpont Morgan.
Thomas Meehan.

On Treasurer's Accounts.

Henry P. Kidder.
Amos A. Lawrence.
Charles H. Parker.
Israel M. Spelman.
George B. Chase.
Solomon Lincoln.

On Elections.

Charles R. Codman.
Moorfield Storey.
John Lowell.
William G. Russell.
Leverett Saltonstall.

On Reports and Resolutions.

Robert D. Smith.
Robert M. Morse, Jr.
Solomon Lincoln.
William Amory.
Francis E. Parker.
Henry Lee.
Charles F. Adams, Jr.

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TREASURER'S STATEMENT.

SIGILLVM + ACADEMIÆ HARVARDIANÆ : IN : NOV : ANG :

1883.

TREASURER'S STATEMENT.

To the Board of Overseers of Harvard College:—

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending August 31, 1883, in the usual form.

The Funds separately invested, with the income thereof, are as follows: —

	Principal.	Income.
UNIVERSITY.		
George B. Dorr Fund (part of),		
$2,000 Union Pacific R. R. Bonds,		$50.50
$4,000 Chic., Burl. & Qu. " " sold during the year,		117.56
150 shares Morris & Essex R.R.Co.,		525.00
50 " Pittsb'g., Ft. Wayne & Chic. R. R. Co.,	$6,625.00	262.50
100 " New York & Harlem R. R. Co.,	10,250.00	500.00
187 " Pennsylvania Coal Co.,	25,525.50	1,496.00
Income received from Mr. Dorr's executor,		2,673.74
COLLEGE.		
Stoughton Scholarship (part of),		
Real Estate in Dorchester,	1,294.30	none
Pennoyer Scholarships (part of),		
Pennoyer Annuity in England,	4,444.44	277.50
Rumford Professorship (part of),		
French Rentes,	10,000.00	580.80
Jonathan Phillips Fund,		
Mortgage,	10,000.00	500.00
Daniel H. Peirce Fund (part of),		
Mortgage,	12,830.71	638.35
Samuel Ward's Gift,		
Ward's (Bumkin) Island, Boston Harbor,	1,200.00	50.00
Botanic Garden Fund (part of),		
$17,000 N. Y. Central R. R. Bonds, paid off during the year,		1,012.95
Amounts carried forward,	$82,169.98	$8,684.90

Amounts brought forward, ...	$82,169.98	$8,684.90

LIBRARY.

Charles Minot Fund (part of),		
$60,000, Buffalo, Bradford, & Pittsb. R. R. Bonds,	60,000.00	4,200.00
Ichabod Tucker Fund (part of),		
Policy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00

SCIENTIFIC SCHOOL.

John B. Barringer Fund (part of),		
40 shares Schenectady Bank Stock, ...	2,200.00	200.00

MEDICAL SCHOOL.

Edward M. Barringer Fund (part of),		
10 shares Schenectady Bank Stock, ...	600.00	25.00

MUSEUM OF COMPARATIVE ZOÖLOGY.

Agassiz Memorial Fund (part of),		
Personal notes (endorsed), ...	20,780.46	1,496.73

OBSERVATORY.

Anonymous gift (now used to pay annuity),		
$1,000, Michigan South'n & No. Indiana R.R. Bond,	1,000.00	70.00
$2,000, Cincinnati Municipal Bonds, ...	2,000.00	140.00
$2,000 Minneapolis Municipal Bonds, ...	2,000.00	160.00
50 shares Pittsburg, Fort Wayne, & Chicago, R. R. Stock, ...	5,000.00	350.00

SPECIAL FUNDS.

Bussey Trust,		
Real Estate, ...	413,092.80	17,109.30
Robert Troup Paine Fund (accumulating),		
$23,500 Mass. 5% Bonds, ...	26,957.50	1,149.72
New Law School Professorship (part of),		
Personal note, ...	90,000.00	4,500.00
	$710,800.74	$38,285.65

The other Funds of the College are invested as a whole. The general investments, with the income thereof, are as follows :—

Investments.	Principal, September 1, 1882.	Principal, August 31, 1883.	Income.
Notes, Mortgages, &c., ...	**$843,836.83**	**$902,294.26**	**$42,208.63**
Railroad Bonds and Premiums, . .	**1,040,885.85**	**1,063,636.42**	**60,383.01**
Railroad Stock, ...	**106,811.93**	**106,811.93**	**8,274.00**
New Boston Coal Mining Co. Bonds,	**9,000.00**	**9,000.00**	**700.00**
Bank Stock, ...	**63,964.00**	**63,964.00**	**4,621.95**
Manufacturing Stock, ...	**102,058.29**	**103,658.29**	**6,425.00**
Real Estate, ...	1,396,523.30	1,408,192.42	81,699.40
Unoccupied Lands, ...	75,487.79	74,487.79	
Brattle Street Reversion, ...	1,000.00	1,000.00	
Advances to Scientific School, . . .	4,707.27	4,055.30	282.44
" " Dental School, ...	14,488.37	13,659.36	869.30
" " Bussey Trust, ...	40,566.13	40,266.13	2,020.07
" " Dining Hall Association,	36,232.16	34,732.16	2,173.93
" " Scudder's Catalogue, .	208.86	190.58	
" " Books, ...	29.36		
" for altering Appleton Chapel,	2,859.62		
Term Bills due Oct., 1883, ...	70,016.74	75,397.36	
Term Bills overdue, ...	2,367.01	2,697.77	
Cash in Suffolk National Bank, .	9,211.25	7,195.40	
Cash in hands of Bursar, ...	5,090.99	1,855.66	
Totals of general investments,	3,825,345.75	3,913,094.83	209,657.73
Totals of special investments,	686,515.84	710,800.74	38,285.65
Amounts, . . .	$4,511,861.59	$4,623.895.57	$247,943.38

During the year there have been no important changes in the investments. The sum of $17,000, received in payment for $17,000 of New York Central R. R. bonds, which were held as a special investment for the Botanic Garden Fund, has been credited to the Lowell Fund for a Botanic Garden, in accordance with the provision made by those who gave the bonds in 1867. The sum of $1000 being the gain of capital from the payment at par of New York Central R. R. bonds held for the "general investments," has been credited to the account of "Unoccupied Lands," to reduce the book valuation of that investment. The account of "railroad bond premiums" has been charged with $4600 for the premium paid upon $25,000 of seven per cent bonds purchased, and it has been credited with $742.50 as the gain upon $27,000 of Chic., Burl. & Quincy R. R. bonds bought and sold during the year, and with $5460 which was taken from the interest received on $546,000 of seven per cent bonds held during the whole year. This account is also charged temporarily with $104.32 for the difference between accrued interest advanced and that repaid during the year. An additional story has been built upon the Gray Estate in Washington Street, at a cost of $12,119.12, of which $450 was paid in the previous year, and the valuation of the estate has been increased therefor during the year by the amount of $11,669.12. Such of the securities received for the George B. Dorr Fund and the E. M. Barringer Fund as could be advantageously sold have, in accordance with the settled policy of the University, been turned into cash and the amount thereof credited to those Funds against the "general investments." These securities were first entered at the executors' valuations, which in some cases differed considerably from the market value at the time they were transferred to the College, but as the College received the property as residuary legatee, the valuations were not important. The purchase of land in Dorchester was made in order to obtain suitable access to the "Stoughton Pasture," which is held for the Stoughton scholarship, subject to a lease for one hundred years, which will expire in 1896. The Stoughton Pasture is a part of the old real estate of the College which is exempted from taxation by the Constitution of Massachusetts. All other changes in the investments of the University are sufficiently accounted for by the receipts and payments hereinafter stated in detail.

The net income of the general investments ($209,657.73) has been divided at the rate of 5^{57} per cent among the Funds to which they belong, after allowing to the Medical School, Law School, and Physical Laboratory Building Funds a special rate of four per cent on their balances during the period of construction. The balance of $40.78 has been placed to the credit of the University account.

The rate of income this year as compared with that for 1881–82 shows a falling off of $\frac{5}{100}$ of one per cent, but as the rate is still above that which can now be got from new investments with sufficient security it is to be expected that there will be a further falling off from time to time. Large outlays during a single year for repairs, improvements, and insurance upon productive real estate often cause fluctuations in the rate of income which have no special significance. The cost of all improvements upon real estate, other than additions yielding increased income, is taken from the rent of the year in which the improvements are made. No other provision is made to offset the impairment of capital which is constantly going on, owing to the competition of newer buildings rather than the actual wearing out of the older ones.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments: —

Interest on funds for		
University Salaries and Expenses,	$24,555.62	
College Expenses,	3,148.16	
Library,	1,331.62	
College Salaries,	29,583.85	
Gymnasium, and repairs on College buildings,	none.	
College Term bills,	173,002.27	
Sundry cash receipts,	8,742.46	
		240,363.98
Expended for		
University Salaries and Expenses,	$28,081.49	
College Expenses,	36,511.11	
Library Salaries and Expenses (not books),	20,011.93	
College Salaries,	137,624.19	
Gymnasium Expenses,	8,956.08	
Repairs and insurance on College Buildings not valued on Treasurer's books,	6,465.91	
		237,650.71
Balance, which has been carried to Stock Account, to repay in part the deficit of last year,		$2,713.27

A large increase in the number of undergraduates and the the receipt during the year of more than a year's income from the new George B. Dorr Fund have allowed a current expenditure for the University, College, and Library about equal to that of the previous year, increased expenses for some purposes being offset by reductions elsewhere. They have also provided the sums required for the taking of the old Gymnasium, and for the return to the "Stock Account" of $2713.27, as a partial repayment of last year's deficit. For 1881–82 the deficit for the University, College, and Library was $14,738.64.

For the Divinity School the income has been sufficient to meet increased outlay for improvements, and to give a surplus of $1322.59. For 1881–82 there was a surplus of $2819.41.

The decrease in the number of Law students has caused a deficit of $1674.46 for the Law School, notwithstanding gains in the income from the new Book Fund and from the Bussey Trust. For 1881–82 there was a surplus of $364.26. The terms of gift of the New Professorship Fund required its income to be added to the principal during the vacancy in the professorship.

The Medical School has made a surplus of $3562.20, notwithstanding increased expenses and a loss in fees from students. For 1881–82 the surplus was $7843.92. A serious fire occurred on May 11, 1883, in the new building for the Medical School, but the sum of $18,569.76 which was received therefor from the insurance companies fully covered the cost of repairs.

The Dental School has been able to largely increase its outlay for instruction and make a surplus of $829.01, which has been used to reduce the debt of the School. For 1881–82 the surplus was $1339.37.

For the Lawrence Scientific School there is a surplus of $651.97, which has been used to reduce the debt of the School. For 1881–82 the surplus was $197.87. The sum of $4226.23 from the income of the Agassiz Memorial Fund has been used to repay in part the notes given by Mr. Agassiz to the Memorial Fund for advances on account of the extension of the Museum building. Mr. Agassiz has continued to make very large private outlays for the benefit of the Museum.

The expenses of the Observatory have consumed all the subscriptions for current use received within the year and left a deficit of $2409.46, which has been provided for out of the annual subscriptions paid in advance during the year 1878–79. For 1881–82 there was a deficit of $1172.67.

The Bussey Institution has had gains in fees from students and in income from the Bussey Trust, which have allowed a considerable increase of expenditure. The deficit for the year is $755.05, but this has been provided for out of the surplus of the previous year which was $805.55.

The gross income from the Bussey stores slightly exceeded that of last year, but heavy expenditure for repairs and improvements, especially in the heating and hoisting department, has been necessary in continuation of the like expenditure of last year. There has, however, been a moderate gain in net income.

During the year the Mary Osgood Annuity Fund has become the Mary Osgood Book Fund, owing to the death of the annuitant, and a part of the Lucy Osgood Annuity Fund has for the like reason become the Lucy Osgood Book Fund. The name of the Botanic Garden Fund has been changed to that of the Botanic Department Fund, and the Stoughton Scholarship Fund has been separated from the "Exhibitions" account, which included it.

Gifts have been received during the year as follows:—

TO FORM NEW FUNDS OR INCREASE OLD ONES.

From Edward Russell, $125, to increase the scholarship founded by him.

From the Class of 1828, $1294, being the amount of the Class Fund, for the establishment of a scholarship to be called the "Scholarship of the Class of 1828."

From Rev. James G. Rodger, $600, to found a scholarship in Harvard College, and for the benefit of the Divinity School.

From the executor of George B. Dorr, property at valuations amounting to $111,150, on account of a residuary bequest "for the benefit of the general funds" of Harvard College without any restriction whatever. The sum of $2673.74 was also received from Mr. Dorr's executor as income from said property.

From the executor of Edward M. Barringer, property at valuations amounting to $27,159.53, on account of a residuary bequest for the benefit of the Medical School. This valuation considerably exceeded the market value of the property at the time it was received.

Subscriptions for the increase of the Botanic Department Fund, paid to Sept. 1, 1883, from

Alexander Agassiz . . .	$1000	William Perkins	$100
George Higginson . . .	1000	Jacob C. Rogers	100
Mrs. Frances A. Minns . .	250	Samuel D. Warren . . .	1000
			$3450

Subscriptions for the endowment of a Physical Laboratory, paid to Sept. 1, 1883, from

Frederick L. Ames	$10,000	Charles F. Choate	$500
Arthur W. Blake	500	William Endicott, Jr.	2000
			$13,000

Subscriptions to establish a fund of which the income shall be used for the purchase of books for the Law School, paid to Sept. 1, 1883, from

Francis Bartlett	$100.	Henry P Kidder, $2000 of bonds sold for	$1641.25
A friend, through Prof. Thayer	50.	Henry Villard (2d instalm't)	5000.
			$6791.25

Subscriptions for the further endowment of the Divinity School, paid to Sept. 1, 1883, from

Abbot, Prof. Ezra	$100.	Everett, Prof. C. C.	$100.
Allen, Rev. Joseph H.	40.	Fish, Rev. William H.	10.
Bixby, Rev. James T.	33.33	Hall, Rev. E. H.	30.
Bond, Rev. H. F.	10.	Hale, Rev. E. E.	33.33
Bowditch, J. Ingersoll	200.	Lee, Henry	300.
Collyer, Rev. Robert	25.	Lippitt, Henry	100.
Eliot, Charles W.	100.	Wendte, Rev. Charles W.	50.
			$1131.66

Subscriptions to be applied towards a fund for the endowment of the Dental School, paid to Sept. 1, 1883, from

Dr. George H. Ames	$20	Dr. A. B. Jewell	$20
Dr. F. E. Banfield	50	Dr. T. O. Loveland	50
Dr. A. G. Bouvé	20	Dr. H. C. Meriam	20
Dr. E. P. Bradbury	20	Dr. F. A. Merrill	20
Dr. E. C. Briggs	20	Dr. W. E. Page	40
Dr. D. M. Clapp	20	Dr. L. D. Shepard	20
Dr. T. H. Chandler	20	Dr. S. S. Silva	20
Dr. E. E. Frost	20	Dr. E. H. Smith	20
Dr. Thomas Fillebrown	20	Dr. J. G. W. Werner	20
			$440

Subscriptions to be applied towards a fund for the endowment of the Observatory, paid to Sept. 1, 1883, from

Amory, William	$2000	Kidder, Henry P., $3000 of bonds sold for	$2484.38
A friend, through Rev. James Freeman Clarke	10,000	Lyman, Arthur T.	500.
Claflin, William	100	Lyman, Theodore	200.
Delano, Joseph C.	250	Sears, Mrs. David	200.
Gardner, George	200	Ware, Dr. Charles E.	500.
Gardner, John L.	500	Wolcott, Mr. and Mrs. J. Huntington	200.
Johnson, Samuel, Jr.	250		
			$17,384.38

In order to increase the salary of the President of Harvard College subscriptions towards a fund have been paid to Sept. 1, 1883, from

Mr. and Mrs. Henry Adams	$1000	Mrs. John E. Lodge	$500
Frederick L. Ames	5000	Miss Anna C. Lowell	1000
George Baty Blake	500	Augustus Lowell	1000
Stanton Blake	500	Arthur T. Lyman	1000
Martin Brimmer	2000	Theodore Lyman	1000
Walter C. Cabot	500	George A. Nickerson	1000
F. Gordon Dexter	1000	Charles J. Paine	2000
W. E. C. Eustis	500	Francis E. Parker	250
William H. Forbes	250	George Putnam	250
John L. Gardner	2500	Henry B. Rogers	1000
Mrs. John L. Gardner	2500	W. G. Russell	250
George Higginson	5000	Stephen Salisbury	2000
James J. Higginson	1000	Philip H. Sears	1000
Edward W. Hooper	2000	George O. Shattuck	250
Henry P. Kidder	2000	Quincy A. Shaw	7000
Henry Lee	5000	Nathaniel Thayer	5000
Abbott Lawrence	500	J. Huntington Wolcott	100
			$56,350

Subscriptions towards a fund for retiring allowances to officers of the University, paid to Sept. 1, 1883, from

William Amory	$1032.22
Arthur T. Lyman	500.
	$1532.22

The Henry Bromfield Rogers Scholarship Fund has been established during the year. The President and Fellows have taken for University purposes the old Gymnasium building, and in accordance with the agreement made in 1859 with Mr. Rogers, who in that year anonymously gave the Gymnasium to the College, have appropriated a sum equal to its appraised value to a scholarship for undergraduates, amounting to $3180.50.

GIFTS FOR IMMEDIATE USE.

From George W. Wales, $200, for books for the Library, in continuance of former gifts for the same purpose.

Subscriptions for the current expenses of the Observatory, paid to Sept. 1, 1883, from

Adams, Charles Francis	$100
Ames, Fred. L.	100
Beal, James H.	50
Bremer, John L.	100
Brimmer, Martin	100
Cabot, Walter C.	50
Choate, Charles F.	100
Coolidge, T. Jefferson	100
Curtis, Charles P.	100
Dalton, Charles H.	50
Fay, R. S.	50
Forbes, J. M.	100
Gardner, John L.	100
Grew, Henry S.	50
Hemenway, Mrs. A.	100
Higginson, George	100
Hooper, Mrs. S.	100
Hunnewell, H. H.	100
Lodge, Mrs. Anna C.	50
Lowell, Augustus	$50
Norcross, Otis	100
Paine, Charles J.	50
Payson, Samuel R.	50
Pickering, E. C.	200
Pickman, W. D.	200
Phillips, John C.	100
Robbins, R. E.	50
Sears, Mrs. David	100
Sears, F. R.	50
Shattuck, G. O.	50
Shaw, Mrs. Cora L.	30
Thayer, Nathaniel	100
Upham, George P.	50
Weld, W. G.	50
Wheelwright, A. C.	50
Wigglesworth, Misses	100
Winthrop, Robert C.	50
	$3030

Subscriptions to aid in publishing the University Bulletin, paid to Sept. 1, 1883, from

A. Agassiz	$50
Charles P. Curtis	200
Henry Lee	50
C. S. Sargent	$50
W. B. Weeden	100
	$450

From an anonymous friend, $500, to increase the salary of the Professor of Entomology.

From Professor Josiah P. Cooke. $300, for the compensation of an assistant in Chemistry.

From the Dante Society, $100, for the purchase of books on Dante.

For lectures on Political Economy, through William Gray, Treasurer, $300.

Subscriptions towards the fund for the new building for the Medical School, paid to Sept. 1, 1883, from

Arthur Blake	$100
J. A. Burnham	1000
T. O. H. P. Burnham	$1000
Henry Woods	1000
	$3100

From Quincy A. Shaw, $500, and Mrs. Emily W. Appleton, $500, to be spent for the Museum of the Medical School.

From Thomas Jefferson Coolidge, the sum of $50,000, on account of his gift for the construction of the Jefferson Physical Laboratory.

From the Massachusetts Society for Promoting Agriculture, $1000, "as the salary during the current academic year of Mr. Sereno Watson, Curator of the Herbarium."

From Thomas G. Appleton, acting on behalf of his brother Nathan Appleton, $2500, to be applied towards the expenses incurred in the improvements of Appleton Chapel.

From Henry L. Higginson, $500, for the School of Veterinary Medicine.

From Louis A. Shaw, $109.61, for the purchase of books for the French Department.

The total amount of these gifts for immediate use is $63,089.61, as is also stated on page 14 of this report.

OTHER GIFTS.

From Edward John Ensor, a chronological chart.

From William E. Darwin, an etching showing the study of the late Charles Darwin as it appeared on the day of his death.

From Dr. R. M. Hodges and others, a bust of Professor Henry J. Bigelow, on condition that it shall be permanently placed in the surgical lecture room of the new Medical School building on Boylston St.

From Dr. George H. Tilden and Dr. Francis H. Williams and others, a portrait of Professor Oliver Wendell Holmes, for the Harvard Medical School.

From William Amory and others, acting as a committee of many graduates, a full-length portrait of President Rutherford B. Hayes, painted by William M. Chase.

From Henry Lee and Henry L. Higginson, a bust of Ralph Waldo Emerson, by Daniel C. French.

From Samuel J. Bridge, the offer of a bronze statue of John Harvard, to be made by Daniel C. French.

From Henry Lee, the offer to provide the sum of $1500 a year for five years, for additional instruction in the department of Political Economy.

EDWARD W. HOOPER,
Treasurer.

BOSTON, Dec. 20, 1883.

General Statement of Receipts and Disbursements for the year ending

INCOME.

Interest on notes, mortgages, and advances, ...		$54,689.45
" " Massachusetts 5% Bonds, ...		1,149.72
" " Policy Mass. Hospital Life Insurance Co., ...		200.00
" " New Boston Coal Mining Co. Bond, ...		700.00
" " Railroad Bonds (after deductions for sinking premiums).		
Atchison, Topeka, & St. Fe, 7%, ...	$11,100.00	
Buffalo, Bradford & Pittsburg, ...	4,200.00	
Burlington & Mo. River in Nebraska, 6%,	15,450.00	
Chicago, Burlington & Quincy, 7%, . . .	155.56	
Marion & McPherson. 1st Mortg., 7%, .	8,863.90	
Ionia & Lansing, 1st Mortg., 8%, ...	10,131.11	
Marq., Hough. & Onton., 6%, ...	1,267.60	
Kan. City, St. Joseph & Council Bluffs, 7%,	3,000.00	
Kansas City, Topeka, & Western, 7%, .	6,452.78	
Michigan Southern & Northern Indiana,	70.00	
Union Pacific, 6%, ...	50.50	
New York Central, 6%, ...	1,668.40	
Lincoln & No. Western, 7%, ...	3,424.17	
		65,834.02
" " Municipal Bonds.		
Cincinnati, ...	140.00	
Minneapolis, ...	160.00	
		300.00
Dividends on Stocks.		
Charles River National Bank, ...	480.00	
First (Cambridge) " "	400.00	
Fitchburg " "	168.00	
Massachusetts " "	132.00	
Merchants " "	1,584.00	
New England " "	222.00	
Old Boston " "	550.00	
Schenectady " " (N. Y.),	225.00	
Bank taxes refunded, ...	1,085.95	
		4,846.95
Amoskeag Manufacturing Co., ...	1,440.00	
Amory " "	216.00	
Massachusetts " "	560.00	
Merrimack " "	850.00	
Nashua " "	1,440.00	
Stark Mills " "	1,200.00	
Wamsutta " "	704.00	
New Bedford Copper "	15.00	
		6,425.00
Chicago, Burlington & Quincy R. R., . .	7,826.00	
Pittsfield & North Adams Railroad, . .	315.00	
Quincy Railroad Bridge Company, . . .	133.00	
Pittsburg, Ft. Wayne, & Chicago R. R.,	612.50	
Morris & Essex R. R., ...	525.00	
New York & Harlem R. R., ...	500.00	
		9,911.50
Pennsylvania Coal Co., ...		1,496.00
Amount carried forward, ...		$145,552.64

by the Treasurer of Harvard College,
August 31, 1883.

EXPENSES.

Paid to account of Expenses in the

University, as per Table I. (page 34),		$34,151.81
College, " " II. (page 36).		
Salaries for instruction,	$137,624.19	
Repairs,	6,452.57	
Insurance on College Edifices, not valued on Treasurer's books,	13.34	
General Expenses,	36,511.11	
Scholarships,	25,256.66	
Beneficiaries,	2,618.61	
Prizes for Reading, &c.,	1,512.10	
Botanic Garden,	5,778.81	
Herbarium,	1,884.00	
Gymnasium,	8,956.08	
		226,607.47
Library, as per Table III. (page 40).		
Books,	17,412.66	
Salaries and other expenses,	20,011.93	
		37,424.59
Divinity School, as per Table IV. (page 42).		
Salaries and other expenses,	21,535.55	
Scholarships and Beneficiaries,	1,489.01	
		23,024.56
Law School, as per Table V. (page 44),		132,378.46
Medical School, as per Table VI. (page 45),		161,491.72
Dental School, as per Table VII. (page 46),		4,945.77
Lawrence Scientific School, as per Table VIII. (page 47).		
Salaries and other expenses,	19,389.12	
Museum of Comparative Zoölogy,	22,654.66	
		42,043.78
Observatory, as per Table IX. (page 48),		19,146.99
Bussey Institution, as per Table X. (page 48),	7,580.53	
School of Veterin'y Medicine,	609.22	
Arnold Arboretum,	6,592.33	
		14,782.08
Amount carried forward		$695,997.23

General Statement of Receipts and Disbursements for the year ending

INCOME.

Amount brought forward, . .		$145,552.64
Real Estate, from rents, &c. (gross receipts).		
Cambridge (Houses and Lands), ...	35,719.30	
Boston (general investments), ...	76,730.39	
Bussey stores, ...	33,595.98	
Sundry estates, ...	7,039.26	153,084.93
Term Bills.		
College, as per Table II., ...	173,002.27	
Divinity School, as per Table IV., ...	2,922.73	
Law School, as per Table V., ...	19,375.00	
Medical School, as per Table VI., ...	48,983.09	
Dental School, as per Table VII., ...	4,150.00	
Lawrence Scientific School, as per Table VIII., .	4,080.00	
Observatory, as per Table IX., ...	37.50	
Bussey Institution, as per Table X., ...	870.00	253,420.59
Sundries.		
From Wm. Pennoyer Annuity, ...	277.50	
Trustees of Thayer Scholarships, ...	3,600.00	
" Count Rumford's Legacy, . . .	580.80	
" Edward Hopkins, ...	233.88	
For use of Library by resident graduates and others,	165.00	
Degrees of A.M., and Ph.D., ...	390.00	
Degree of Bachelor of Arts out of course, and Examination fees, ...	744.00	
Fees in Infirmary and Laboratory, Dental School, .	1,295.90	
Printing by College Press for other Departments, .	997.50	
Sales of grass, wood, and old material, ...	1,399.26	
Sales of old examination papers, ...	65.36	
Sale of time signals from Observatory, ...	2,862.50	
Sale of tickets to Commencement Dinner of 1883, .	996.00	
Sale of books, pamphlets, catalogues, &c., ...	642.96	
Subscriptions to Veterinary Hospital, ...	450.00	
Use of lockers at Gymnasium, ...	1,753.00	
Returned by Beneficiaries, ...	85.00	
Fees for use of Gymnasium, ...	40.00	
Repayment of sundry advances, ...	29.36	
Proportion of expenses of Bursar's office repaid by other Departments, ...	356.14	
Proportion of expenses of Gymnasium repaid by other Departments, ...	858.66	17,822.82
Income received with George B. Dorr Fund, ...	2,673.74	
Sundry gifts for immediate use, see page 11, ...	63,089.61	65,763.35
Total amount of income, carried forward, . . .		$635,644.33

by the Treasurer of Harvard College,
August 31, 1883.

EXPENSES.

Amount brought forward,			$695,997.23
Real Estate, expenses.			
Insurance.			
Cambridge,	$15.00		
Boston,	128.94		
Bussey stores,	66.75		
		210.69	
Taxes.			
Cambridge,	2,058.93		
Boston,	12,688.53		
Bussey stores, &c.,	7,826.28		
		22,573.74	
Interest.			
Bussey stores (on advances),		2,020.07	
Repairs, improvements, care, cleaning and sundries.			
Cambridge,	8,458.39		
Boston,	7,400.50		
Bussey stores,	3,197.74		
		19,056.63	
Heating and hoisting for Bussey stores, including repairs and renewal of apparatus,	5,988.29		
Less for sales of heat and power,	2,612.45		
		3,375.84	
			47,236.97
Annuities.			
Bussey,		6,662.34	
Gore,		900.00	
Mary Osgood,		789.91	
Lucy Osgood,		534.00	
Class of 1802,		120.00	
Anonymous,		720.00	
Bemis,		2,745.00	
			12,471.25
Sundry payments from income.			
To the Treasurer of the Museum of Fine Arts, from Gray Fund for Engravings,		822.28	
The income of the Daniel Williams Fund for the benefit of the Herring Pond and Mashpee Indians,		893.72	
The income of the Sarah Winslow Fund, to the Minister and Teacher at Tyngsboro', Mass.,		264.34	
For lectures on Political Economy,		300.00	
Jefferson Physical Laboratory, spent on building,		21,720.00	
			24,000.34
Amount carried forward,			$779,705.79

General Statement of Receipts and Disbursements for the year ending

Total amount of income, brought forward, . . $635,644.33

RECEIPTS EXCLUSIVE OF INCOME.

GIFTS.		
Edward Russell Scholarship (additional), ...	$125.00	
Class of 1828 “	1,294.00	
Rodger “	600.00	
Henry B. Rogers “	3,180.50	
George B. Dorr Fund, ...	111,150.00	
Edward M. Barringer Fund (additional), ...	27,159.53	
Subscriptions to Law School Book Fund, ...	6,791.25	
“ “ Retiring Allowance “	1,532.22	
“ “ President's “	56,350.00	
“ for endowment of Botanic Garden, . . .	3,450.00	
“ “ “ “ Physical Laboratory, .	13,000.00	
“ “ “ “ Divinity School, . . .	1,131.66	
“ “ “ “ Dental School, . . .	440.00	
“ “ “ “ Observatory, ...	17,384.38	
		243,588.54
SALES.		
$28,000 New York Central R. R. 6% bonds, paid off,	28,000.00	
4,000 Marq., Hough. & Ont. “ 6% called “ “ “	4,000.00	
9,000 Burl. & Mo. R. (Neb.) “6% “ “ “ “	9,000.00	
27,000 Chicago, Burl. & Quincy R. R. 7% bonds, .	33,952.50	
		74,952.50
3,000 Int. & Gt. North. R. R. 1st mort. 6% bds. (Dorr Fd.),	3,141.30	
3,000 “ “ “ “ “ 2d “ “ “ “ “	2,518.80	
7,000 Milw. & St. Paul “ 2d “ 7$\frac{3}{10}$% “ “ “	8,807.65	
4,000 Chic., Burl. & Quincy R. R. 7% “ “ “	5,025.00	
5,000 Cincin. & Indiana “ 7% “ “ “	5,303.85	
2,000 Union Pacific “ 6% “ “ “	2,272.50	
33 shares Chic., Burl. & Quincy R. R. Co., “ “	4,253.50	
10 “ N. Y. Guaranty & Indemnity Co., “ “	1,417.50	
25 “ Manhattan Gas Light Co., “ “	2,710.94	
150 “ Morris & Essex R. R. Co., “ “	9,290.62	
		44,741.66
110 “ N.Y.C. & H.R. R.R. Co. (E.M. Barringer Fd.),	13,763.75	
8 “ Lake Shore & Mich. So. “ “ “	888.00	
$1,000 N.Y.C. & H.R.R.R. 6% bond “ “ “	1,054.60	
4,500 U. S. Registered 4% bonds “ “ “	5,388.75	
		21,095.10
SUNDRIES.		
From Dining Hall Association, to reduce debt, . . .	1,500.00	
Insurance, fire of Nov., 1872, for the Bussey Trust,	300.00	
“ for fire in new Medical School building,	18,569.76	
		20,369.76
Drafts on Baring Brothers & Company, ...	15,665.21	
Less paid Baring Brothers & Company in account,	10,661.11	
		5,004.10

Amount carried forward, . . $1,045,395.99

by the Treasurer of Harvard College,
August 31, 1883.

EXPENSES.

Total of expenses brought forward, ... $779,705.79

INVESTMENTS AND SUNDRY PAYMENTS.

Chicago, Burl. & Quincy R. R. 7% bonds, $27,000 cost,	$33,210.00	
Ionia & Lansing " 8% " 20,000 "	22,248.75	
Kan. City, Top. & Western " 7% " 4,000 "	4,700.00	
Lincoln & No. Western " 7% " 6,000 "	7,200.00	
Atchison & Nebraska " 7% " 15,000 "	17,700.00	
Mass. 5% bond, 1894 (Paine Fund), . 1,000 "	1,152.50	
Land in Dorchester (Stoughton Scholarship), "	1,294.30	
16 shares Wamsutta Mills, ... "	1,600.00	
		89,105.55
Paid for accrued interest on above bonds, ...		1,319.39
Property received as a portion of the George B. Dorr Fund, at the executor's valuations:		
$3,000 Intern. & Great North. R. R. 1st mort. 6% bonds,	$3,105.00	
3,000 " " " " " 2d " 6% "	3,105.00	
7,000 Milwaukee & St. Paul " 2d " $7\frac{3}{10}$% "	8,750.00	
4,000 Chicago, Burl. & Quincy " 7% "	5,070.00	
5,000 Cincinnati & Indiana " 7% "	5,175.00	
2,000 Union Pacific " 6% "	2,277.50	
33 shares Chicago, Burl. & Quincy R. R. Co., ...	4,153.87	
10 " New York Guaranty & Indemnity Co., . . .	1,400.00	
25 " Manhattan Gas Light Co., ...	2,762.50	
150 " Morris & Essex R. R. Co., ...	9,300.00	
50 " Pittsburg, Ft. Wayne & Chicago R. R. Co.,	6,625.00	
100 " New York & Harlem River R. R. Co., . . .	10,250.00	
187 " Pennsylvania Coal Co., ...	25,525.50	
		87,499.37
Property received as a portion of the Edward M. Baringer Fund, at the executor's valuations:		
110 shares New York Central & Hudson River R. R. Co.,	16,390.00	
8 " Lake Shore & Michigan Southern R. R. Co.,	1,080.00	
10 " Schenectady Bank Stock, ...	600.00	
$1,000 New York Central & Hudson River R. R. 6% bond,	1,040.00	
4,500 United States Registered 4% bonds, ...	5,040.00	
		24,150.00
Invested in Notes and Mortgages, ...	1,205,000.00	
Less Notes and Mortgages paid off, ...	1,150,704.97	
		54,295.03
Paid on account of improvements to Gray Estate, . .	11,669.12	
" " " " Mr. Agassiz's note from income of Memorial Fund, ...	4,226.23	
		15,895.35

Amount carried forward, ... $1,051,970.48

General Statement of Receipts and Disbursements for the year ending

INCOME.

Amount brought forward,		$1,045,395.99
Advances to premiums, on $546,000 7% R.R. bonds, repaid,	5,460.00	
" " accrued interest on bonds repaid, ...	1,215.07	
" " account for altering Appleton Chapel, repaid (balance), ...	359.62	
		7,034.69

Balance, September 1, 1882.		
Cash in Suffolk National Bank, ...	$9,211.25	
Cash in hands of Allen Danforth, Bursar, ...	5,090.99	
Term Bills due October, 1882, ...	70,016.74	
" " over due, ...	2,367.01	
		86,685.99
		$1,139,116.67

by the Treasurer of Harvard College,
August 31, 1883.

EXPENSES.

Amount brought forward,		$1,051,970.48
Balance, August 31, 1883.		
Cash in Suffolk National Bank,	$7,195.40	
Cash in hands of Allen Danforth, Bursar,	1,855.66	
Term Bills due October, 1883,	75,397.36	
" " overdue,	2,697.77	
		87,146.19
		$1,139,116.67

The following Account exhibits the State of the Property, as embraced in the Treasurer's Books, August 31, 1883.

Notes and Mortgages.				
Mortgages			$365,125.00	
Long Wharf Co.'s Notes			60,000.00	
Manufacturing Co.'s Notes			500,000.00	
Personal Notes for Agassiz Memorial Fund			20,780.46	
Personal Note for new professorship in Law School			90,000.00	
				$1,035,905.46
Massachusetts 5% Bonds,	$23,500	valued at		26,957.50
New Boston Coal Mining Co. Bonds,	10,000	" "		9,000.00
Municipal Bonds.				
Cincinnati,	2,000.00	valued at	2,000.00	
Minneapolis,	2,000.00	" "	2,000.00	
				4,000.00
Railroad Bonds.				
Burl. & Mo. R. in Nebr. non ex. 6%,	250,000	val'd at	255,173.50	
Kan. City, St. Jos. & C. B. 1st M., 7%,	50,000	" "	50,000.00	
Lincoln & No. West., 1st M., 7%,	63,000	" "	63,000.00	
Atch., Top., & St. Fé, 1st M., 7%,	185,000	" "	185,000.00	
Kan. City, Top., & West., 1st M. 7%,	108,000	" "	108,000.00	
Marion & McPherson, 1st M., 7%,	150,000	" "	150,000.00	
Ionia & Lansing, 1st Mortg., 8%,	141,000	" "	139,866.25	
Atchison and Nebraska, 7%,	15,000	" "	15,000.00	
Marqu., Hough. & Onton., 6%,	19,000	" "	19,942.50	
Buffalo, Bradford, and Pittsb., 7%,	60,000	" "	60,000.00	
Michigan So. and No. Indiana, 7%,	1,000	" "	1,000.00	
Railroad Bond Premiums,			77,654.17	
				1,124,636.42
Railroad Stock.				
Chicago, Burlington, and Quincy,	1,001	shares,	99,261.93	
Pittsburgh, Fort Wayne and Chicago,	100	"	11,625.00	
Pittsfield and North Adams,	63	"	6,300.00	
Quincy R. R. Bridge Co.,	10	"	1,250.00	
New York and Harlem,	100	"	10,250.00	
				128,686.93
Manufacturing Stock.				
Amory,	36	shares,	3,600.00	
Amoskeag,	12	"	10,800.00	
Massachusetts Mills,	7	"	6,600.00	
Merrimack,	17	"	17,000.00	
Nashua,	36	"	25,560.00	
New Bedford Copper Co.,	5	"	250.00	
Pacific Mills,	20	"	17,468.29	
Stark Mills,	12	"	11,900.00	
Wamsutta Mills,	96	"	10,480.00	
				103,658.29
Amount carried forward,				$2,432,844.60

Amount brought forward, ...			$2,432,844.60
Bank Stock.			
Charles River, ...	60 shares,	6,000.00	
First Cambridge, ...	50 "	5,000.00	
Fitchburg, ...	24 "	2,403.00	
Massachusetts, ...	12 "	3,000.00	
Merchants, ...	264 "	34,732.00	
New England, ...	37 "	3,896.00	
Old Boston, ...	200 "	8,933.00	
Schenectady (N. Y.), ...	50 "	2,800.00	
			66,764.00
Real Estate.			
Houses and Lands in Cambridge yielding income,		357,163.83	
Unimproved Lands in Cambridge, ...		74,487.79	
Bussey Real Estate in Boston and Dedham, . .		413,092.80	
Amory Estate, Franklin Street, Boston, . . .		165,615.81	
Webb Estate, Washington Street, Boston, . .		164,604.79	
Andrews Estate, Washington Street, Boston, .		165,562.00	
Gray Estate, Washington Street, Boston, . . .		487,119.12	
Estate on Hawley Street, Boston, ...		38,650.78	
Estate on Hawkins Street, "		29,476.09	
Ward's (Bumkin) Island, Boston Harbor, . .		1,200.00	
Reversion of Buildings on Brattle Street, Boston,		1,000.00	
Land in Dorchester, ...		1,294.30	
			1,899,267.31
Sundries.			
In hands of Count Rumford's Trustees in Paris,		10,000.00	
Annuity of William Pennoyer, valued at . . .		4,444.44	
Policy of the Mass. Hospital Life Insurance Co.,		5,000.00	
Pennsylvania Coal Co., 187 shares, ...		25,525.50	
Due from Dining Hall Association, ...		34,732.16	
" " Lawrence Scientific School, ...		4,055.30	
" " Bussey Trust, ...		40,266.13	
" " Dental School, ...		13,659.36	
Advances to Scudder's Catalogue, ...		190.58	
Term bills due October, 1883, ...		75,397.36	
" " overdue, ...		2,697.77	
			215,968.60
Cash in Suffolk National Bank, ...		7,195.40	
" " hands of Allen Danforth, Bursar, ...		1,855.66	9,051.06
		Total	$4,623,895.57

The foregoing Property represents the following Funds and Balances, and is answerable for the same.

Principal, Sept. 1, 1882.		Principal, Aug. 31, 1883.	
	UNIVERSITY FUNDS.		
$84,962.25	Stock Account (so called),	$87,675.52	
141,638.74	Insurance and Guaranty Fund (so called),	141,638.74	
5,250.00	**Samuel D. Bradford** Fund,	5,250.00	
15,750.00	**Israel Munson** Fund,	15,750.00	
16,871.63	**Leonard Jarvis** Fund,	16,871.63	
1,242.38	**Peter C. Brooks** Fund for building a President's House,	1,283.64	
155.73	**Thomas Cotton** Fund,	155.66	
57,233.40	**John Parker** Fellowships,	57,221.28	
10,865.70	**Harris** Fellowships,	10,578.54	
12,244.36	**John Thornton Kirkland** Fellowship,	12,176.35	
10,311.83	**James Walker** Fellowship,	10,636.21	
28,773.76	**Rogers** Scholarship,	29,576.47	
1,688.39	**Sumner** Prize Fund,	1,782.41	
300.00	**Robert N. Toppan** Prizes	150.00	
9,000.00	**Sever** Fund (unrestricted)	9,000.00	
23,010.13	Retiring Allowance Fund,	25,890.35	
25,000.00	**John C. Gray** Fund,	25,000.00	
	President's Fund,	57,125.18	
	George B. Dorr Fund,	110,792.79	
			618,554.77
	COLLEGE FUNDS.		
27,748.64	**Alford** Professorship,	27,748.64	
28,337.40	**Boylston** “	28,337.40	
21,619.50	**Eliot** “	21,619.50	
10,000.00	“ “ (**Jon. Phillips's** gift),	10,000.00	
3,500.01	**Erving** “	3,500.01	
35,990.99	**Fisher** “	35,990.99	
20,217.08	**Hersey** “	20,217.08	
18,575.78	“ “ (**Thomas Lee's** gift),	19,610.46	
3,747.33	**Hollis** “ (Mathematics),	3,747.33	
34,441.96	**Hollis** “ (Divinity),	34,560.38	
43,062.93	**McLean** “	43,062.93	
21,000.00	**Perkins** “	21,000.00	
25,020.19	**Plummer** “	25,020.19	
52,500.00	**Pope** “	52,500.00	
52,996.37	**Rumford** “	52,996.37	
23,139.83	**Smith** “	23,139.83	
16,240.38	Fund for Permanent Tutors,	16,240.38	
125,000.00	**Class Subscription** Fund,	125,000.00	
12,766.91	**Daniel H. Peirce** “	12,830.74	
2,031.76	**Paul Dudley** Fund for Lectures,	2,144.94	
31,500.00	**Jonathan Phillips** Fund (unrestricted)	31,500.00	
$1,053,735.36	Amounts carried forward,	$610,767.17	618,554.77

Principal, Sept. 1, 1882.		Principal, Aug. 31, 1883.	
$1,053,735.36	. . . . Amounts brought forward, .	$610,767.17	618,554.77
1,050.00	**John A. Blanchard** Fd. (unrestricted)	1,050.00	
3,416.40	**John W. P. Abbot** " "	3,606.67	
5,600.00	**Daniel Austin** " "	5,600.00	
346.16	**Henry Flynt's** Bequest,	345.99	
2,550.05	**Abbot** Scholarship,	2,542.09	
795.72	**Alford** "	800.06	
5,137.18	**Bartlett** "	5,173.81	
5,425.24	**Bassett** "	5,452.41	
11,756.10	**Bigelow** "	11,660.91	
106,332.71	**Bowditch** "	107,255.46	
570.17	**Bright** " (balance),	587.67	
2,743.10	**Browne** "	2,745.89	
7,146.39	**Class of 1802** Scholarship,	7,174.42	
3,099.37	" **1814** "	3,071.98	
5,010.06	" **1815** " **(Kirkland)**,	5,039.12	
3,748.32	" **1817** "	3,757.08	
	" **1828** "	1,351.04	
2,634.12	" **1835** "	2,630.83	
3,739.94	" **1841** "	3,773.26	
2,997.83	" **1852** " **(Dana)**,	3,164.82	
6,663.43	**Crowninshield** "	7,034.56	
5,199.06	**Derby** "(George & Martha),	5,238.64	
5,351.66	**W. S. Eliot** "	5,349.77	
5,985.86	**Farrar** "	5,969.28	
2,463.30	**Greene** "	2,480.49	
6,394.37	**Hodges** "	6,750.52	
5,294.79	**Levina Hoar** "	5,389.72	
4,862.67	**Hollis** "	4,883.54	
530.88	**Matthews** " (balance),	735.14	
7,684.27	**Morey** "	7,612.27	
6,594.17	**Pennoyer** "	6,611.43	
	Rodger "	609.75	
	Henry B. Rogers	3,180.50	
673.90	**Edward Russell** "	843.40	
3,861.94	**Saltonstall** " (Mary & Leverett),	4,077.05	
637.92	" " (Dorothy),	673.46	
5,371.34	**Slade** "	5,420.50	
3,175.99	**Sever** "	3,177.89	
9,419.85	**Sewall** "	9,444.54	
43,721.48	**Shattuck** "	44,356.74	
2,758.83	**Story** "	2,762.51	
	Stoughton "	2,131.50	
4,147.20	**Gorham Thomas** "	4,128.19	
6,563.05	**Toppan** "	6,628.61	
25,045.52	**Townsend** "	24,940.58	
3,907.51	**Walcott** "	3,958.53	
8,652.28	**Whiting** "	9,184.20	
11,899.16	Exhibitions,	9,569.98	
1,773.54	**Palfrey** Exhibition,	1,782.35	
1,200.00	**Samuel Ward** Fund,	1,200.00	
1,062.80	**John Glover** Fund,	1,122.01	
2,267.70	**Rebecca A. Perkins** Fund,	2,394.03	
$1,420,998.69	. . . Amounts carried forward, . .	$987,141.86	618.554.77

Principal, Sept. 1, 1882.		Principal, Aug. 31, 1883.	
$1,420,998.69	. . . Amounts brought forward,	$987,141.86	$618,554.77
10,961.35	**Quincy Tufts** Fund,	10,923.88	
5,292.25	**Day** “	5,252.01	
10,216.31	**Munroe** “	10,213.19	
15,692.58	**Lee** Fund for Reading,	15,676.68	
4,337.94	**Boylston** Prizes for Elocution,	4,324.57	
11,925.18	**Bowdoin** Prizes for Dissertations,	11,889.40	
994.23	**Hopkins** Gift for “Deturs,”	1,016.38	
54,255.77	Botanic Department Fund,	41,399.03	
35,882.31	**Lowell** Fund for a Botanic Garden,	52,882.31	
18,100.42	Herbarium Fund,	18,258.59	
125.00	Salary account (unexpended balance),	125.00	
29,956.58	Physical Laboratory Endowment,	44,805.04	
			1,203,907.94
	LIBRARY FUNDS.		
11,287.47	Subscription for Library,	11,006.36	
2,140.40	**Bowditch** Fund,	2,089.48	
2,620.11	**Bright** “	2,494.20	
5,701.33	**Denny** “	5,264.49	
5,303.00	**Farrar** “	5,298.62	
3,515.70	**Haven** “	3,642.05	
5,755.36	**Hayward** “	5,712.17	
2,458.71	**Hollis** “	2,479.84	
2,079.52	**Homer** “	2,072.02	
5,797.68	**Lane** “	5,417.55	
20,469.98	**Lowell** “	20,897.96	
61,232.01	**Minot** “	62,227.38	
	Osgood “ (Mary),	6,962.64	
	Osgood “ (Lucy),	7,081.82	
5,188.81	**Salisbury** “	5,075.97	
20,538.32	**Sever** “	20,412.60	
4,455.24	**Shapleigh** “	4,315.60	
38,310.43	**Sumner** “	37,277.74	
5,018.29	**Tucker** “	5,014.07	
6,014.71	**Ward** “	5,041.82	
178.59	**Wales** “	130.80	
16,489.87	**Walker** “	16,351.42	
158.06	Sundry gifts, etc. (unexpended balances),	59.03	
			236,325.63
	LAW SCHOOL FUNDS.		
8,426.35	Law School (balance),	6,751.89	
15,750,00	**Dane** Professorship,	15,750.00	
23,979.82	**Bussey** “	23,979.82	
8,340.81	**Royall** “	8,340.81	
90,000.00	New “	92,962.50	
25,230.00	Law School Book Fund,	32,021.25	
125,139.80	“ “ Building Fund,	25,653.33	
			205,459.60
	MEDICAL SCHOOL FUNDS.		
67,312.93	Medical School (balance),	70,875.13	
19,192.65	**Jackson** Medical Fund,	19,192.65	
17,129.20	**Geo. C. Shattuck** Fund,	17,129.20	
12,031.53	**Warren** Fund for Anatom'l Museum,	12,243.37	
3,787.65	**Boylston** Fund for Medical Prizes,	3,748.64	
2,280.42	“ “ “ “ Books,	2,407.42	
$2,262,053.36	. . . . . Amounts carried forward,	$125,596.41	$2,264,247.94

Principal, Sept. 1, 1882.		Principal, Aug. 31, 1883.	
$2,262,053.36	. . . . . Amounts brought forward,	$125,596.41	$2,264,247.94
2,624.85	Medical Library Fund, ...	2,767.06	
101,420.32	Medical School Building Fund, . .	17,671.59	
2,000.00	**Quincy Tufts** Medical Fund, . .	2,000.00	
808.05	**Edward M. Barringer** Fund, . .	25,512.68	
			173,547.74

DIVINITY SCHOOL FUNDS.

23,486.17	General Fund, ...	24,808.76	
37,583.74	**Bussey** Professorship, ...	37,583.74	
16,015.81	**Parkman** "	16,015.81	
6,008.43	**Hancock** "	6,008.43	
44,345.73	**Winn** Prof. of Ecclesiastical History,	44,845.73	
20,280.38	**Dexter** Lectureship, ...	20,280.38	
9,184.69	**Henry Lienow** Fund, ...	9,184.69	
5,250.00	**Mary P. Townsend** Fund, . . .	5,250.00	
2,100.00	**Winthrop Ward** Fund, ...	2,100.00	
1,050.00	**Samuel Hoar** "	1,050.00	
1,050.00	**Abraham W. Fuller** Fund, . . .	1,050.00	
1,050.00	**Caroline Merriam** " . . .	1,050.00	
13,012.18	**Jackson** Foundation, ...	13,096.95	
2,177.95	**Joshua Clapp** Fund, ...	2,177.95	
1,050.00	**William Pomeroy** Fund, . . .	1,050.00	
525.00	**Hannah C. Andrews** Fund, . .	525.00	
3,326.65	**J. Henry Kendall** Scholarship, . .	3,511.96	
2,898.42	**Nancy Kendall** " . . .	3,059.84	
911.34	**Lewis Gould** Fund	911.34	
789.54	**Adams Ayer** "	833.54	
7,875.00	**Joseph Baker** "	7,875.00	
5,252.15	**Thomas Cary** Scholarships, . . .	5,194.69	
2,319.97	**George Chapman** Scholarship, .	2,309.19	
3,161.30	**Joshua Clapp** " . .	3,337.37	
1,675.80	Beneficiary money returned . . .	1,769.15	
40,000.00	**Th. Tileston** of New York Endowm't	40,000.00	
10,000.00	**Henry P. Kidder** Fund, ...	10,000.00	
1,000.00	**Abby Crocker Richmond** Fund, .	1,000.00	
68,535.36	New Endowment, ...	69,667.02	
17,000.00	**Oliver Ames** Fund, ...	17,000.00	
800.00	**Daniel Austin** Fund, ...	800.00	
11,206.72	**Abner W. Buttrick** Fund, . . .	11,530.95	
			364,877.49

LAWRENCE SCIENTIFIC SCHOOL, AND MUSEUM OF COMPARATIVE ZOÖLOGY FUNDS.

38,807.17	Professorship of Engineering, . .	38,807.17	
2,860.50	Professorship of Chemistry, . . .	2,860.50	
61,536,43	**Abbott Lawrence** Fund,. . . .	61,536.43	
50,375.00	**James Lawrence** "	50,375.00	
30,686.85	**John B. Barringer** "	30,686.85	
100,620.00	**Sturgis Hooper** "	100,570.00	
50,000.00	**Gray** Fund for Zoölogical Museum,	50,000.00	
297,933.10	**Agassiz Memorial** Fund, } . .	297,933.10	
7,594.01	Teachers' and Pupils' Fund, } . .	7,594.01	
117,469.34	Permanent Fund, ...	117,469.34	
7,740.66	**Humboldt** Fund, ...	7,740.66	
			765,573.06
$3,495,451.97	. . . . . . Amounts carried forward, ...		$3,568,246.23

Principal, Sept. 1, 1882.		Principal, Aug. 31, 1883.	
$3,495,451.97	. . . . . Amounts brought forward, ...		$3,568,246.23
	OBSERVATORY FUNDS.		
110,293.88	**Edward B. Phillips** Fund, . . .	110,293.88	
21,000.00	**James Hayward** " . . .	21,000.00	
22,440.22	**David Sears** " . . .	23,065.18	
12,845.46	**Josiah Quincy** " . . .	12,411.37	
2,000.00	**Charlotte Harris** " . . .	2,000.00	
10,000.00	Anonymous Observatory Fund (at present charged with an Annuity),	10,000.00	
5,481.98	Observatory Subscriptions (balance),	3,072.52	
	Observatory Endowment, ...	17,384.38	
			199,227.33
	OTHER FUNDS FOR SPECIAL PURPOSES.		
413,092.80	**Bussey** Trust (income thereof, ½ to Bussey Institution, ¼ to Law School, and ¼ to Divinity School), . . .	413,092.80	
50,000.00	**Bright** Legacy, ...	50,000.00	
25,930.13	**Robert Troup Paine** Fund, . . .	27,079.85	
805.55	**Bussey** Institution, ...	50.50	
515.00	Dental Subscription Fund, . . .	955.00	
2,882.43	**Bussey** Building Fund, ...	2,882.43	
151,673.32	**James Arnold** "	152,095.73	
9,949.91	**Arnold** Arboretum	12,596.18	
42,000.00	**James Savage** Fund, ...	42,000.00	
15,941.53	**Gray** Fund for Engravings, . . .	16,146.08	
20,560.63	**Gore** Annuity Fund, ...	20,805.88	
7,362.59	**Mary Osgood** Annuity Fund (transferred to Library Funds).		
12,855.53	**Lucy Osgood** Annuity Fund, . .	5,955.79	
51,073.31	**Bemis** Annuity Fund, ...	51.113.81	
2,528.97	**Gospel Church** Fund, ...	2,669.84	
3,171.50	**John Foster** Fund (income to Divinity School, Law School, and Medical School, in turn), ...	3,171.50	
1,117.76	Baring Bros. & Co. (balance due them),	6,121.86	
	School of Veterinary Medicine, . .	340.78	
	Physical Laboratory Building Fund,	28,458.78	
			835,536.31
	FUNDS IN TRUST FOR PURPOSES NOT CONNECTED WITH THE COLLEGE.		
16,050.99	**Daniel Williams** Fund for the conversion of the Indians, ...	16,051.31	
4,836.13	**Sarah Winslow** Fund, for the Minister and Teacher at Tyngsborough, Mass.,	4,834.39	
			20,885.70
$4,511,861.59			$4,623,895.57

Changes in the Funds during the year ending August 31, 1883.

Total amount of Funds, August 31, 1883, as before stated,	$4,623,895.57	
Total amount of Funds, September 1, 1882, as before stated,	4,511,861.59	
Showing a total increase during the year of		$112,033.98
Which is made up as follows: —		
Gifts forming new Funds or increasing old ones,		243,588.54
Transfers forming new Funds or increasing old ones,	26,121.69	
Balances created during the year, and increase of Funds established during the year,	29,733.16	
Increase of Stock Account, by excess of income over expenditure, in College, Library, and University accounts,	2,713.27	58,568.12
		302,156.66
Deduct from this amount for		
Decrease of Funds by amounts transferred to new accounts,	26,121.69	
Decrease of specially invested Funds by loss from change of investment,	2,812.11	
Other decrease more than increase of Funds and balances, which appear both at the beginning and end of the year,	161,188.88	190,122.68
		$112,033.98

Net decrease of Funds and balances as above stated,	190,122.68
Less increase, other than gifts for capital account, as above stated,	58,568.12
Leaving amount of the net decrease of the Funds and balances, excluding gifts for capital account, as is also shown in the following table,	$131,554.56

Statement showing Changes in the Different

Increase of Funds which appear both at the beginning and the end of the year, being the excess of income (including gifts for immediate use) over payments towards the special objects of those Funds.

Peter C. Brooks Fund,	$41.26
James Walker Fellowship,	824.88
Rogers Scholarship,	802.71
Sumner Prize Fund,	94.02
Retiring Allowance Fund,	1,348.00
Hersey Professorship (**Thomas Lee's** gift),	1,034.68
Hollis " (Divinity),	118.42
Daniel H. Peirce Fund,	63.83
Paul Dudley Fund for Lectures,	113.18
John W. P. Abbott Fund,	190.27
Alford Scholarship,	4.34
Bartlett "	36.13
Bassett "	27.17
Bowditch "	922.75
Bright " (balance),	17.50
Browne "	2.79
Class of 1802 Scholarship,	28.03
" **1815** " (**Kirkland**),	29.06
" **1817** "	8.76
" **1841** "	33.32
" **1852** " (**Dana**),	166.99
Crowninshield "	871.13
Derby " (**George & Martha**),	39.58
Greene "	17.19
Hodges "	856.15
Levina Hoar "	94.93
Hollis "	20.87
Matthews " (balance),	204.26
Pennoyer "	17.26
Edward Russell "	44.50
Saltonstall " (**Mary & Leverett**),	215.11
" " (**Dorothy**),	85.54
Slade "	49.16
Sever "	1.90
Sewall "	24.69
Shattuck "	635.26
Story "	3.68
Toppan "	65.56
Walcott "	51.02
Whiting "	481.92
Palfrey Exhibition,	8.81
John Glover Fund,	59.21
Rebecca A. Perkins Fund,	126.33
Amount carried forward,	$8,331.65

Funds during the year ending August 31, 1883.

Decrease of **Funds**, which appear both at the beginning and the end of the year, being the excess of payments over income received (including gifts for immediate use) for the special objects of those Funds.

Thomas Cotton Fund,	$.07
John Parker Fellowships,	12.12
Harris Fellowship,	287.16
John Thornton Kirkland Fellowship,	68.01
Robert N. Toppan Prizes,	150.00
Henry Flynt's Bequest,	.17
Abbot Scholarship,	7.96
Bigelow “	95.19
Class of 1814 Scholarship,	27.39
“ **1835** “	8.29
W. S. Eliot “	1.89
Farrar “	16.58
Morey “	72.00
Gorham Thomas “	19.01
Townsend “	104.94
Exhibitions,	289.31
Quincy Tufts Fund (College),	37.47
Day Fund,	40.24
Munroe Fund,	3.12
Lee Fund for Reading,	15.90
Boylston Prizes for Elocution,	13.37
Bowdoin Prizes for Dissertations,	35.78
Subscription for Library,	281.11
Bowditch Book Fund,	50.92
Bright “ “	125.91
Denny “ “	436.84
Farrar “ “	4.38
Hayward “ “	43.19
Homer “ “	7.50
Lane “ “	380.13
Salisbury “ “	112.84
Sever “ “	125.72
Shapleigh “ “	139.64
Sumner “ “	1,032.69
Tucker “ “	4.22
Ward “ “	972.89
Wales “ “	47.79
Walker “ “	138.45
Sundry gifts for Books (unexpended balances),	99.03
Law School (balance),	1,674.46
Law School Building Fund,	99,486.47
Boylston Fund for Medical Prizes,	39.01
Medical School Building Fund,	83,748.73
Amount carried forward,	$190,252.89

Statement showing Changes in the Different

Amount brought forward,	$8,331.65	
Hopkins Gift for "Deturs,"	22.15	
Botanic Department Fund,	693.26	
Physical Laboratory Fund,	1,848.46	
Herbarium Fund,	158.17	
Haven Book Fund,	126.35	
Hollis " "	21.13	
Lowell " "	427.98	
Minot " "	995.37	
New Professorship of Law,	2,962.50	
Medical School (balance),	3,562.20	
Warren Fund for Anatomical Museum,	211.84	
Boylston Fund for Medical Books,	127.00	
Medical Library Fund,	142.21	
Divinity School (general fund),	1,322.59	
Winn Professorship of Ecclesiastical History,	500.00	
Jackson Foundation,	84.77	
J. H. Kendall Scholarship,	185.31	
Nancy " "	161.42	
Adams Ayer Fund,	44.00	
Joshua Clapp Scholarship,	176.07	
Divinity School Beneficiary money returned,	98.35	
Abner W. Buttrick Fund,	324.23	
David Sears "	624.96	
Robert Troup Paine "	1,149.72	
James Arnold "	422.41	
Arnold Arboretum "	2,646.27	
Gray Fund for Engravings,	204.55	
Gore Annuity Fund,	245.25	
Lucy Osgood " "	182.08	
Bemis " "	40.00	
Gospel Church "	140.87	
aring Bros. & Co.,	5,004.10	
Daniel Williams Fund,	.32	
		33,182.54
Credit balances created,		
Physical Laboratory Building Fund,	28,458.78	
School of Veterinary Medicine,	340.78	
		28,799.56
Increase of Funds established during the year.		
President's Fund,	775.18	
Stoughton Scholarship,	91.63	
Class of 1828 "	57.04	
Rodger "	9.75	
		933.60
Funds established by transfer of accounts,		
Lucy Osgood Book Fund,	7,081.82	
Stoughton Scholarship,	2,039.87	
		9,121.69
Amount carried forward,		$72,037.39

Funds during the year ending August 31, 1883. (*Continued.*)

Amount brought forward,	$190,252.89	
Thomas Cary Scholarships,	57.46	
George Chapman "	10.78	
Sturgis Hooper Fund,	50.00	
Josiah Quincy "	434.09	
Observatory Subscriptions (balance),	2,409.46	
Bussey Institution,	755.05	
Mary Osgood Legacy,	399.95	
Sarah Winslow Fund,	1.74	194,371.42
Decrease of Botanic Department Fund by amount transferred to **Lowell** Fund for a Botanic Garden,		17,000.00
Decrease of **Lucy Osgood** Annuity Fund by amount transferred to **Lucy Osgood** Book Fund,		7,081.82
Decrease of " Exhibitions " by amount transferred to **Stoughton** Scholarship,		2,039.87
Decrease of **E. M. Barringer** Fund, net loss from change of special investment,		2,454.90
Decrease of **George B. Dorr** Fund, net loss from change of special investment,		357.21
Amount carried forward,		$223,305.22

Statement showing Changes in the Different

Amount brought forward,	$72,037.39
Increase of Lowell Fund for a Botanic Garden by transfer from Botanic Department Fund, ...	17,000.00
Increase of Stock Account, by excess of income over expenditure, in College, Library, and University accounts, ...	2,713.27
	91,750.66

Balance, which is the net decrease of the Funds for the year ending August 31, 1883, apart from gifts for capital account,	131,554.56
Total, ...	$223,305.22

Funds during the year ending August 31, 1883. (Continued.)

Amount brought forward, ... $223,305.22

Total, ... $223,305.22

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every fund, in case that sum be either less or more than the actual income of the fund. If the object to which the income of a fund is to be applied be a general one, — like salaries, for example,— no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 52.

TABLE No. I.

THE UNIVERSITY.

RECEIPTS.

Income of the unappropriated fund heretofore called the Stock Account,	$4,732.38	
Income of the following funds: —		
Insurance and Guaranty,	7,889.29	
Israel Munson,	877.28	
Leonard Jarvis,	939.77	
Samuel D. Bradford,	292.43	
Sever,	501.30	
John C. Gray,	1,392.50	
George B. Dorr,	7,874.86	
Peter C. Brooks,	69.18	
Thomas Cotton,	8.19	
President's,	775.18	
Parker Fellowship,	3,187.88	
John Thornton Kirkland Fellowship,	681.99	
Harris Fellowship,	605.24	
James Walker Fellowship,	574.38	
Rogers Scholarship,	1,602.71	
Sumner Prize,	94.02	
Retiring Allowance,	1,348.00	33,446.58
For the degrees of A.M., and Ph.D.,	390.00	
For care of the **Sarah Winslow** Fund,	6.77	
Sale of Quinquennial Catalogues,	37.00	
From other Departments for proportion of expenses of Bursar's office,	356.14	
Balance remaining after dividing the net income among the Funds,	40.78	830.69
		$34,277.27

PAYMENTS.

Overseers' Expenses.		
Advertising,	$210.90	
Printing President's Annual Report,	457.04	
Printing Treasurer's " "	119.96	
Printing other reports, auditing Treasurer's accounts, &c.,	201.56	
Amount carried forward,		$989.46

TABLE I., CONTINUED.

PAYMENTS.

Amount brought forward, ...		$989.46
Office Expenses.		
President's	$131.79	
Treasurer's	316.30	
Bursar's	524.27	
Supt. of Buildings, ...	63.24	
Corporation Rooms (fuel, rent, &c.), ...	1,695.13	2,730.73
Salaries.		
President, ...	5,008.26	
Treasurer, ...	4,000.00	
Secretary of the Board of Overseers, ...	100.00	
Bursar, ...	3,000.00	
Bursar's Assistant, ...	800.00	
Secretary at Cambridge, ...	400.00	
For keeping Treasurer's books and copying records and other papers, ...	2,800.00	
Superintendent of Buildings, ...	1,500.00	17,608.26
Fellowships.		
John Parker, ...	3,200.00	
Harris, ...	892.40	
John Thornton Kirkland, ...	750.00	
Rogers Scholarship, ...	800.00	
James Walker, ...	250.00	5,892.40
Prizes.		
Robert N. Toppan, in Political Science, . .		150.00
Memorial Hall and Sanders Theatre.		
Repairs, fuel, gas, &c., ...		927.00
Sundries.		
Advertising, ...	1,039.28	
Labor, &c. on grounds outside of College Yard,	358.30	
Repairs and improvements on the President's house,	27.92	
Subscription to Mercantile Agency, ...	125.00	
Watering streets, ...	205.00	
Watchmen, ...	436.46	
Rent of Hall in Boston for lectures on Pedagogy,	16.50	
Fire Apparatus, ...	27.77	
Freight, legal services, diplomas, &c., ...	161.43	
Extra pages in Catalogue, ...	208.80	
Posting notices, &c. to prevent right of way, . .	67.00	
Estimated value of old Gymnasium, credited to the **Henry B. Rogers** Scholarship, . . .	3,180.50	5,853.96
		$34,151.81

Table No. II.

THE COLLEGE.

RECEIPTS.

From Term Bills.			
Instruction,		$138,337.50	
Rents available for general expenses,		34,152.27	
Diplomas,		512.50	173,002.27
Income of Scholarship Funds.			
Abbot,		142.04	
Alford,		44.34	
Bartlett,		286.13	
Bassett,		302.17	
Bigelow,		654.81	
Bowditch,		5,922.75	
Bright, ½ income of Bright Legacy,		1,392.50	
Browne,		152.79	
Class of 1802,		398.03	
" **1814,**		172.61	
" **1815 (Kirkland),**		279.06	
" **1817,**		208.76	
" **1828,**		57.04	
" **1835,**		146.71	
" **1841,**		208.32	
" **1852 (Dana)** (accumulating),		166.99	
Crowninshield (accumulating),		371.13	
Derby, George and **Martha,**		289.58	
Wm. Samuel Eliot,		298.11	
Farrar,		333.42	
Greene,		137.19	
Levina Hoar (Town of Lincoln),		294.93	
Hodges (accumulating),		356.15	
Hollis,		270.87	
Matthews (½ of net rents of Hall),		4,904.26	
Morey,		428.00	
Pennoyer. Interest,	$119.76		
Annuity,	277.50	397.26	
Rodger,		9.75	
Edward Russell (accumulating),		44.50	
Saltonstall, Mary and **Leverett,**		215.11	
Saltonstall, Dorothy (accumulating),		35.54	
Savage,		300.00	
Sever,		176.90	
Sewall,		524.69	
Shattuck,		2,435.26	
Slade,		299.16	
Story,		153.68	
Stoughton,		91.63	
Gorham Thomas,		230.99	
Toppan,		365.56	
Townsend,		1,395.06	
Walcott,		217.68	
Whiting (accumulating),		481.92	25,593.38
Received from the Trustees of the **Thayer** Scholarships,			3,600.00
Amount carried forward,			$202,195.65

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward, ...			$202,195.65
Other Beneficiary Funds, income of.			
"Exhibitions," Interest, ...	$549.15		
Returned by beneficiaries,	85.00	$634.15	
Palfrey "Exhibition,"		98.81	
Samuel Ward. From special investment, . .		50.00	
John Glover (accumulating), ...		59.21	
Rebecca A. Perkins "		126.33	
Quincy Tufts, ...		610.53	
Moses Day, ...		294.76	
Munroe, ...		569.03	2,442.82
Prize Funds, income of.			
Thomas Lee Prizes for Reading, ...		874.10	
Ward Nicholas Boylston Prizes for Elocution,		241.63	
James Bowdoin Prizes for Dissertations, . . .		664.22	
Edward Hopkins Gift for "Deturs,"		289.25	2,069.20
Funds for Instruction.			
Income of the **Alford** Professorship, ...		1,545.62	
Boylston "		1,578.37	
Eliot "		1,204.23	
J. Phillips's addition to Eliot Prof.,		500.00	
Erving Professorship, ...		194.95	
Fisher "		2,004.70	
Hersey "		671.61	
Hollis " (Mathematics), . .		208.71	
McLean "		2,398.61	
Perkins "		1,169.70	
Plummer "		1,393.61	
Pope "		2,924.25	
Rumford "		2,975.68	
Smith "		1,288.90	
Fund for Permanent Tutors, . . .		904.57	
Thos. Lee Fund for the Hersey Prof.		1,034.68	
Class Subscription, ...		6,962.50	
Henry Flynt, ...		18.27	
Hollis Professor of Divinity, . . .		1,918.42	
Paul Dudley Fund (accumulating),		113.18	
Gifts to increase salaries, ...		800.00	31,810.56
Botanic Garden.			
Income of Fund. Interest, ...	$2,184.33		
From special investment,	1,012.95	3,197.28	
" " the **Lowell** Fund, ...		2,274.79	
Estimated value of use of house by Prof. Gray,		1,000.00	6,472.07
Herbarium. Income of Fund, ...		1,008.17	
Sale of paper, &c., ...		34.00	
Gift for Curator's salary, ...		1,000.00	2,042.17
Amount carried forward, ...			$247,032.47

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward,	$247,082.47	
Income of **Jonathan Phillips's** unrestricted Fund,	$1,754.55	
" " **John A. Blanchard's** " "	58.49	
" " **Daniel H. Pierce** Fund, ...	638.35	
" " **J. W. P. Abbot** " (accumulating),	190.27	
" " Fund for Physical Laboratory, ...	1,848.46	4,490.12
Sundries.		
For the Degree of Bachelor of Arts out of course, and examination fees, ...	744.00	
Sales of grass and old material, ...	160.19	
Sale of old examination papers, ...	6.536	
For Printing by College Press for other departm'ts,	997.50	
For use of rooms by College officers, ...	745.00	
Sale of tickets to Commencement Dinner of 1883,	996.00	
For use of lockers at Gymnasium, ...	1,753.00	
Fees for use of Gymnasium, ...	40.00	
For use of Gymnasium by other Departments, .	858.66	
From **Louis A. Shaw,** for books for French Dpt.	109.61	6,469.32
Total receipts, ...		$257,991.91

PAYMENTS.

Paid the incumbents of the following Scholarships.	
Abbot, ...	$150.00
Alford, ...	40.00
Bartlett, ...	250.00
Basset, ...	275.00
Bigelow, ...	750.00
Bowditch, ...	5,000.00
Bright, ...	1,375.00
Browne, ...	150.00
Class of 1802, ...	250.00
" **1814,**	200.00
" **1815 (Kirkland),**	250.00
" **1817,**	200.00
" **1835,**	150.00
" **1841,**	175.00
Derby, George and Martha, ...	250.00
Wm. Samuel Eliot, ...	300.00
Farrar, ...	350.00
Greene, ...	120.00
Levina Hoar, ...	200.00
Hollis, ...	250.00
Matthews, ...	4,700.00
Morey, ...	500.00
Amount carried forward,	$15,885.00

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward,	$15,885.00	
Pennoyer,	380.00	
Savage,	300.00	
Sever,	175.00	
Sewall,	500.00	
Shattuck,	1,800.00	
Slade,	250.00	
Story,	150.00	
Thayer,	3,600.00	
Gorham Thomas,	250.00	
Toppan,	300.00	
Townsend,	1,500.00	
Walcott,	166.66	
		25,256.66
Paid other Beneficiaries.		
Exhibitions,	923.46	
Palfrey Exhibition,	90.00	
Samuel Ward Income,	50.00	
Quincy Tufts " (part of),	648.00	
Day Fund " " "	335.00	
Munroe Fund " " "	572.15	
		2,618.61
Prizes. **Lee** Prizes for Reading,	290.00	
Boylston Prizes for Elocution,	255.00	
Bowdoin Prizes for Dissertations	700.00	
"Deturs" from **Hopkins** Fund	267.10	
		1,512.10
Salaries for instruction,		137,624.19
Repairs and improvements on College Edifices not valued on Treasurer's books,		6,452.57
Insurance on College Edifices, etc. not valued on Treasurer's books,		13.34
Botanic Garden, for labor, repairs, and materials,		5,778.81
Herbarium, " " "		1,884.00
Gymnasium, Locker money, paid Director,	1,081.00	
Salaries and wages,	2,666.00	
Janitors and cleaning,	943.79	
Gas, water, and sundries,	790.34	
Fuel,	626.13	
Apparatus and fittings,	2,848.82	
		8,956.08
General Expenses.		
Appropriations for collections and laboratories.		
Physical Apparatus (Prof. Lovering),	$600.00	
Mineral and Chemical (Prof. Cooke),	800.00	
Rumford (Prof. Gibbs),	300.00	
Botanical (Prof. Farlow),	350.00	
Biological (Prof. Farlow),	35.00	
Geological (Prof. Shaler),	100.00	
Amounts carried forward,	$2,185.00	$190,096.36

TABLE II., CONTINUED.

PAYMENTS.

Amounts brought forward,	$2,185.00		$190,096.36
Zoölogical (Asst. Profs. Faxon and Mark),	70.00		
Fine Arts (Prof. Norton),	200.00		
Physical (Prof. Trowbridge),	300.00		
Drawing (Instructor Moore),	100.00		
		$2,855.00	
Appleton Chapel.			
Preaching and morning services,	1,835.00		
Organist and Choir-master,	800.00		
Choir,	800.00		
Books, hymnals, and music,	116.48		
Repairing organ,	603.28		
Blowing organ,	73.75		
		4,228.51	
Admission examinations,		867.54	
Advertising,		22.38	
Books and binding,		157.89	
Cleaning and care of College buildings not valued on Treasurer's books,		8,242.52	
College Yard expenses, labor and material, &c.,		2,040.85	
Commencement Dinner 1883,		998.34	
Dean's and Registrar's Office, clerk, stationery, postage, copying, &c.,		1,790.11	
Fuel,		3,872.12	
Furniture,		159.72	
Freight, diplomas, and sundries,		267.39	
Gas,		1,375.71	
Music, Class-Day, 1883,		125.00	
" Commencement, 1883,		185.00	
Pews hired in Cambridge churches,		1,024.50	
Printing office, expenses,		3,322.55	
Printing,		4.50	
Services of examiners and proctors,		2,880.55	
" " undergraduates,		701.98	
Watchman,		1,048.50	
Water rates,		340.45	
			36,511.11
Total payments,			$226,607.47

TABLE No. III.

THE LIBRARY.

RECEIPTS.

Income of the following Funds for the purchase of books.		
Subscription for Library,		$628.69
Nathaniel I. Bowditch,		119.20
Bright, ½ income of the **Bright** Legacy,	$1,392.50	
Interest on balance,	145.93	1,538.43
Amount carried forward,		$2,286.32

Amount brought forward,		$2,286.32	
Denny,		317.55	
Eliza Farrar,		295.38	
Horace A. Haven,		195.84	
George Hayward,		320.55	
Thomas Hollis,		136.97	
Sidney Homer,		115.86	
Frederick A. Lane,		322.95	
Lowell,		1,140.18	
Charles Minot. Interest,	$68.62		
From special investment,	4,200.00	4,268.62	
Stephen Salisbury,		289.03	
Sever,		1,143.97	
Samuel Shapleigh,		248.14	
Charles Sumner,		2,133.87	
Ichabod Tucker. From special investment,		200.00	
Thomas W. Ward,		335.04	
George W. Wales. Gift,	$200.00		
Interest on unexpended balance,	9.97	209.97	
James Walker,		918.49	
			14,878.73
Gift from Dante Society,			100.00
James Savage Fund for general expenses (½ of income),		1,019.70	
Daniel Austin " " " "		311.92	
			1,331.62
William B. Weeden, gift to aid in publ. Lib'y Bulletins,		100.00	
Henry Lee, " " " " " " "		50.00	
Alexander Agassiz, " " " " " " "		50.00	
Charles P. Curtis, " " " " " " "		200.00	
Charles S. Sargent, " " " " " " "		50.00	
			450.00
Fees for use of Library,		165.00	
Sales of Bulletins and Calendars,		75.00	
Fines,		1.51	
			241.51
			$17,001.86

PAYMENTS.

For Books from	
Subscription Fund,	$909.80
Bowditch "	170.12
Bright "	1,664.34
Denny "	754.39
Farrar "	299.76
Gray "	37.47
Haven "	69.49
Hayward "	363.74
Hollis "	115.84
Homer "	123.36
Lane "	703.08
Lowell "	712.20
Amount carried forward,	$5,923.59

TABLE III., CONTINUED.

PAYMENTS.

Amount brought forward, ...	$5,923.59	
Minot Fund, ...	3,273.25	
Salisbury "	401.87	
Sever "	1,269.69	
Shapleigh "	387.78	
Sumner "	3,166.56	
Tucker "	204.22	
Ward "	1,307.93	
Wales "	257.76	
Walker "	1,056.94	
Dante Society money, ...	132.84	
Duplicate "	17.57	
Balance of old anonymous gift, ...	12.66	
		17,412.66
Salaries and wages, ...	14,697.72	
Binding, ...	1,285.30	
Stationery and postage, ...	589.40	
Fuel, ...	892.29	
Repairs and improvements, ...	176.11	
Freight, water, and sundries, ...	216.38	
Janitors and cleaning, ...	479.77	
Furniture, ...	295.00	
Insurance on steam boiler, ...	15.00	
Bulletins, and other printing, ...	1,364.96	
		20,011.93
		$37,424.59

TABLE NO. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of the following Funds applicable to Salaries.	
General Fund, ...	$1,308.17
Benjamin Bussey Professorship, ...	2,093.43
Parkman Professorship, ...	892.09
John Hancock "	334.65
Winn Professorship of Ecclesiastical History, .	2,470.07
Samuel Dexter, ...	1,129.60
Henry Lienow, ...	511.60
Mary P. Townsend, ...	292.43
Winthrop Ward, ...	116.97
Samuel Hoar, ...	58.49
Abraham W. Fuller, ...	58.49
Caroline Merriam, ...	58.49
Joseph Baker, ...	438.64
Thomas Tileston of New York Endowment, .	2,228.00
Amount carried forward, ...	$11,991.12

TABLE IV., CONTINUED.

RECEIPTS.

Amount brought forward, . .	$11,991.12	
Oliver Ames,	946.90	
Henry P. Kidder,	557.00	
Abby Crocker Richmond,	55.70	
New Subscription,	3,832.44	
		17,383.16
Income of Scholarship Funds.		
Thomas Cary,	292.54	
George Chapman,	129.22	
Joshua Clapp,	176.07	
Jackson Foundation,	724.77	
J. Henry Kendall,	185.31	
Nancy Kendall,	161.42	1,669.33
Income of other Funds.		
Joshua Clapp,	121.31	
William Pomeroy,	58.49	
Hannah C. Andrews,	29.24	
Lewis Gould,	50.74	
Daniel Austin,	44.56	
Abner W. Buttrick,	624.23	
Adams Ayer,	44.00	
John Foster, income for Divinity students every third year,	176.68	
Interest on Beneficiary money returned,	93.35	1,242.60
Term Bills.		
For Instruction,	1,350.01	
For Rents,	1,572.72	
		2,922.73
Sale of books, &c.,		18.50
Benjamin Bussey Trust. One-fourth of net income for use of this School,		2,611.74
		$25,848.06

PAYMENTS.

For Salaries for Instruction,	$18,411.68	
Services of students,	200.00	
Labor, repairs, and improvements,	1,117.37	
Cleaning and care of rooms,	578.50	
Books and binding,	117.00	
Printing,	48.25	
Fuel,	319.58	
Gas,	119.68	
Water rates,	30.00	
Stationery, postage, diplomas, and sundries,	17.95	
Collation,	70.00	
Furniture,	326.31	
Proportion of expenses of Bursar's office,	52.54	
" " " " Gymnasium,	126.69	
Amount carried forward, ...		$21,535.55

TABLE IV., CONTINUED.

PAYMENTS.

Amount brought forward,		$21,535.55
Paid the incumbents of the following Scholarships.		
Jackson Foundation,	$640.00	
Cary,	350.00	
Chapman,	140.00	1,130.00
Paid beneficiaries from the following Funds.		
Buttrick,	300.00	
Pomeroy,	59.01	359.01
		$23,024.56

TABLE NO. V.

LAW SCHOOL.

RECEIPTS.

Income of the following funds.		
Law School Balance,	$469.33	
Nathan Dane,	877.28	
Benjamin Bussey Professorship,	1,335.60	
Isaac Royall,	464.59	
New Professorship,	4,500.00	
Law School Book Fund,	1,534.20	
" " Building "	2,746.78	
Benjamin Bussey Trust (½ of net income for use of this School),	2,611.74	14,539.61
Term Bills.		
For instruction,		19,375.00
Sale of books,		265.42
		$34,180.03

PAYMENTS.

For Salaries for Instruction,	$20,012.50	
Librarian and Assistants,	2,200.00	
Janitor and coat-room boy,	750.37	
Books and binding,	2,926.50	
Fuel,	510.59	
Gas,	295.42	
Printing	144.00	
Scholarships,	1,200.00	
Labor, repairs, and improvements,	190.25	
Stationery and postage,	114.23	
Freight, diplomas, and sundries,	64.68	
Water rates,	57.24	
Furniture,	8.06	
Account of new building,	102,233.25	
Services of examiners and proctors,	64.25	
Proportion of expenses of Bursar's office,	254.95	
" " " " Gymnasium,	614.67	
Insurance,	737.50	$132,378.46

TABLE No. VI.

MEDICAL SCHOOL.

RECEIPTS.

Income of the following Funds.			
Medical School, balance,		$3,749.33	
Jackson Medical,		1,069.05	
Warren, for Anatomical Museum,		670.18	
Ward Nicholas Boylston, for Medical Prizes,		210.99	
Ward Nicholas Boylston, for Medical Books,		127.00	
George C. Shattuck,		954.09	
Hersey Professorship, two-fifths income of the fund,		454.48	
Medical Library Fund,		146.21	
Medical School Building Fund,		2,084.09	
Quincy Tufts,		111.40	
Edward M. Barringer. Interest,	$492.56		
From special investment,	25.00	517.56	
			10,094.38
From students for instruction,		44,997.57	
" " for graduation fees,		2,190.00	
" " in Chemical Laboratory, breakage and chemicals,		988.72	
" " in Practical Anatomy, for material,		806.80	
			48,983.09
Subscriptions to the Building Fund,			4,100.00
Insurance for fire in new building,			18,569.76
			$81,747.23

PAYMENTS.

Boylston Medical Prizes. Prizes,	$200.00		
Advertising,	50.00	250.00	
Warren Anatomical Museum.			
Expenses, and additions to collection,		458.34	
Chemical Laboratory, apparatus, chemicals, and wages,		1,705.00	
Physiological Laboratory, expenses and wages,		1,050.00	
Practical Anatomy and Surgery Expenses,		3,905.15	
Obstetrics Expenses,		316.80	
Histology "		51.58	
Materia Medica "		113.42	
Salaries for instruction,		36,554.48	
Repairs and improvements,		168.79	
Scholarships,		1,000.00	
For account of new building,		108,502.58	
			154,076.74
General Expenses.			
Advertising and catalogues,		$1,962.19	
Alcohol,		39.39	
Books from Library Fund,		4.00	
Cleaning,		245.64	
Clerk,		700.00	
Diplomas,		61.80	
Amounts carried forward,		$3,013.02	$154,076.74

TABLE VI., CONTINUED.

PAYMENTS.

Amounts brought forward,	$3,013.02	$154,076.74
Doorkeeper,	60.00	
Faculty meetings,	32.48	
Fuel,	585.17	
Gas,	532.72	
Insurance,	900.00	
Janitor,	1,200.00	
Librarian,	20.00	
Moving furniture, &c.,	44.00	
Printing,	95.45	
Rent of rooms (in part) for Pathological specimens,	200.00	
Rent and heating of rooms for Chemical Laboratory,	558.34	
Services of Examiners,	5.00	
Stationery, postage, and sundries,	77.38	
Water rates,	91.42	7,414.98
		$161,491.72

TABLE No. VII.

DENTAL SCHOOL.

RECEIPTS.

Income of Subscription Fund,	$38.88	
From Students,	4,150.00	
Infirmary,	1,108.15	
Laboratory,	187.75	
Rent of a part of the School building,	290.00	
		$5,774.78

PAYMENTS.

Advertising and catalogues,	$155.97	
Care of operating room at hospital, and cleaning,	81.00	
Drugs, chemicals, and sundries,	65.13	
Diplomas,	13.70	
Fuel,	145.20	
Gas,	18.18	
Gold foil and metals,	522.40	
Instruments and apparatus,	297.31	
Interest on debt,	869.30	
Printing,	27.75	
Repairs to building,	130.59	
Repairing furniture,	58.79	
Salaries for instruction,	2,350.00	
Stationery and postage,	81.67	
Taxes,	117.78	
Water rates,	11.00	
		$4,945.77

Table No. VIII.

LAWRENCE SCIENTIFIC SCHOOL, AND MUSEUM OF COMPARATIVE ZOÖLOGY.

RECEIPTS.

Income of the following Funds.			
Professorship of Engineering,		$2,161.55	
Professorship of Chemistry,		159.36	
Abbott Lawrence,		3,427 56	
James Lawrence,		2,805.89	
John B. Barringer. Interest,	$1,586.73		
From special investment,	200.00	1,786.73	
Gray Fund for Zoölogical Museum,		2,785.00	
Sturgis Hooper,		5,570.00	
Agassiz Memorial. Interest,	$15,201.98		
From special investment,	1,496.73	16,698.71	
Teachers and Pupils,		422.99	
Humboldt,		431.17	
Permanent Fund for Museum of Zoölogy,		6,543.02	
			42,791.98
Term Bills, for Instruction,			4,080.00
			$46,871.98

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.		
Gray,	$2,785.00	
Agassiz Memorial,	12,472.48	
Teachers and Pupils,	422.99	
Humboldt,	431.17	
Permanent,	6,543.02	
		22,654.66
Salaries for instruction,	16,344.23	
Expenses in Geology,	620.00	
Stationery and postage,	11.10	
Proctorial services,	13.00	
Books, Engineering Department,	45.35	
Printing,	26.50	
Fuel,	365.31	
Gas, freight, and sundries,	25.17	
Janitor and cleaning,	537.70	
Labor and repairs,	183.99	
Expenses Chemical Laboratory (part of),	286.73	
Scholarships,	450.00	
Interest on advances,	282.44	
Water rates,	31.65	
Proportion of expenses of Bursar's office,	48.65	
" " " " Gymnasium,	117.30	
		19,389.12
		$42,043.78

TABLE No. IX.

OBSERVATORY.

RECEIPTS.

Income of the following Funds.		
Observatory, balance,	$305.35	
Edward B. Phillips,	6,143.38	
James Hayward,	1,169.70	
David Sears,	1,249.91	
Josiah Quincy,	715.47	
James Savage (½ of net income),	1,019.70	
Charlotte Harris,	111.40	
New Endowment,	179.74	10,894.65
Fee for instruction,		37.50
Subscriptions, for immediate use,		3,030.00
From sale of time signals,	2,862.50	
" " " Observatory Annals,	78.75	
" " " grass,	25.00	2,966.25
		$16,928.40

PAYMENTS.

Salaries and wages,	$13,756.16	
Cleaning and care of Observatory,	243.02	
Gas,	62.16	
Instruments and apparatus, including repairs on same,	1,757.41	
Repairs and improvements on buildings and grounds,	784.92	
Stationery and postage,	389.23	
Fuel,	92.32	
Books and binding,	250.54	
Water rates,	50.00	
Printing,	1,453.40	
Freight, chemicals, and sundries,	230.97	
Furniture,	76.86	$19,146.99

TABLE No. X.

BUSSEY INSTITUTION.

RECEIPTS.

From **Bussey** Trust (½ net income),	$5,223.48	
From **Bussey** Building Fund,	160.53	
Fees for Instruction,	870.00	
Sale of coal to Arboretum,	85.91	
Sale of grass,	435.56	
From **Arnold** Arboretum for rent of greenhouses,	50.00	$6,825.48

PAYMENTS.

For Salaries,	$5,107.88	
Books,	25.24	
Stationery and postage, cleaning, gas, &c.,	34.18	
Fuel for school building,	30.87	
Wages,	708.45	
Horticultural Department, expenses,	728.07	
Repairs and improvements,	917.42	
Grain,	18.42	
Insurance,	10.00	$7,580.53

TABLE X., CONTINUED.

Bussey Building Fund.

Receipts.

Income of unexpended balance of Fund,	$160.53

Payments.

Income carried to Bussey Institution,	$160.53

James Arnold Fund.

Receipts.

Income of Fund,	$8,448.19

Payments.

19/20 of income carried to Arnold Arboretum,	$8,025.78

Arnold Arboretum.

Receipts.

Income of unexpended balance of Fund,	$554.22	
From **James Arnold** Fund,	8,025.78	
Sale of wood, grass, &c.,	658.60	
		$9,238.60

Payments.

Salary of Director and Assistant,	$3,005.00	
Expenses of Arboretum,	3,587.33	
		$6,592.33

School of Veterinary Medicine.

Receipts.

Gift of **Henry L. Higginson**,	$500.00	
Subscriptions to Veterinary Hospital,	450.00	
		$950.00

Payments.

Salaries for instruction,	$208.33	
Advertising,	242.18	
Printing and other expenses,	158.71	
		$609.22

TABLE No XI.

MISCELLANEOUS FUNDS.

Bussey Trust.

Receipts.

Net income from Real Estate,	$17,109.30

Payments.

Annuities,	$6,662.34	
One-half of the remaining income to Bussey Institution,	5,223.48	
One-quarter " " " Divinity School,	2,611.74	
" " " " " Law School,	2,611.74	
		$17,109.30

TABLE XI., CONTINUED.

Gray Fund for Engravings.

Receipts.

Interest on Fund,	$878.33	
From sale of catalogues,	148.50	
		$1,026.83

Payments.

To the Treasurer of the Museum of Fine Arts,		$822.28

Annuity Funds.

Receipts.

Gore, income,	$1,145.25	
Mary Osgood, income,	889.96	
Lucy Osgood, income,	716.08	
Anonymous Observatory, income,	720.00	
Bemis, income,	2,785.00	
		$5,756.29

Payments.

Gore, annuities,	$900.00	
Mary Osgood, annuity,	789.91	
Lucy Osgood, annuities,	534.00	
Anonymous Observatory, annuity,	720.00	
Bemis, annuity,	2,745.00	
		$5,688.91

Daniel Williams Fund.

Receipts.

Interest on Fund,		$894.04

Payments.

Treasurer of Herring Pond Indians,	$297.90	
“ “ Mashpee Indians,	595.82	
		$893.72

Sarah Winslow Fund.

Receipts.

Interest on Fund,		$269.37

Payments.

Minister at Tyngsborough, Mass.,	$132.17	
Teacher at “ “	132.17	
Commission on income credited to University,	6.77	
		$271.11

James Savage Fund.

Receipts.

Interest on Fund,		$2,339.40

Payments.

Scholarship,	$300.00	
One-half the remaining income to Library,	1,019.70	
“ “ “ “ Observatory,	1,019.70	
		$2,339.40

TABLE XI., CONTINUED.

Bright Legacy.

Receipts.

Interest on Fund,		$2,785.00

Payments.

One-half income to **Bright** Book Fund,	$1,392.50	
One-half income to Scholarship Fund,	1,392.50	$2,785.00

Sundry Accounts.

Receipts.

From **Thomas Jefferson Coolidge** for the Jefferson Physical Laboratory,	$50,000.00	
Interest on the same,	178.78	
	50,178.78	
From Baring Bros. & Co., in account,	5,004.10	$55,182.88

Payments.

Jefferson Physical Laboratory, spent on building,	$21,720.00	
Annuity for Class of 1802,	120.00	
E. M. Barringer Fund, net loss from change of special investment,	2,454.90	
George B. Dorr Fund, net loss from change of special investment,	357.21	
Advances repaid, to		
Agassiz Memorial Fund,	4,226.23	
Dental School,	829.01	
Lawrence Scientific School,	651.97	
		$30,359.32

Gospel Church Fund (accumulating).	Interest on Fund,	$140.87
Robert Troup Paine Fund "	From special investment,	1,149.72

GENERAL SUMMARY OF THE TABLES.

		Receipts.	Payments.
Table I.	University,	$34,277.27	$34,151.81
Table II.	College,	257,991.91	226,607.47
Table III.	Library,	17,001.86	37,424.59
Table IV.	Divinity School,	25,848.06	23,024.56
Table V.	Law School,	34,180.03	132,378.46
Table VI.	Medical School,	81,747.23	161,491.72
Table VII.	Dental School,	5,774.78	4,945.77
Table VIII.	Lawrence Scientific School,	46,871.98	42,043.78
Table IX.	Observatory,	16,928.40	19,146.99
Table X.	Bussey Institution,	6,825.48	7,580.53
	Bussey Building Fund,	160.53	160.53
	James Arnold Fund,	8,448.19	8,025.78
	Arnold Arboretum,	9,238.60	6,592.33
	School of Veterinary Medicine,	950.00	609.22
Table XI.	Bussey Trust,	17,109.30	17,109.30
	Gray Fund for Engravings,	1,026.83	822.28
	Annuity Funds,	5,756.29	5,688.91
	Daniel Williams Fund,	894.04	893.72
	Sarah Winslow Fund,	260.37	271.11
	James Savage Fund,	2,339.40	2,339.40
	Bright Legacy,	2,785.00	2,785.00
	Sundry Accounts,	55,182.88	30,359.32
	Gospel Church Fund,	140.87	
	Robert Troup Paine Fund,	1,149.72	
		$632,898.02	$764,452.58
			632,898.02
		Balance	$131,554.56

Which is the net decrease of the Funds and balances, excluding gifts for capital account, as also shown on page 27.

Certificate of the Joint Committee of the Corporation and Overseers of Harvard College, for examining the Books and Accounts of the Treasurer entered in the Journal kept by him.

We, the undersigned, a joint committee of the Corporation and Overseers of Harvard College to examine the books and accounts of the Treasurer for the year ending August 31, 1883, have examined and audited the Cash book from pages 160 to 201, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were received by him and on hand at the beginning of said year, are now in his possession, or are fully accounted for by entries made therein. We have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

We have carefully examined all notes, bonds, mortgages, and other securities invested during the said year, and are of opinion that all such investments have been judiciously made and are amply secured.

We have in like manner satisfied ourselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

The Committee have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

MARTIN BRIMMER, JOHN QUINCY ADAMS,	*Committee on the part of the Corporation.*
HENRY P. KIDDER, CHARLES HENRY PARKER, ISRAEL M. SPELMAN,	*Committee on the part of the Board of Overseers.*

Boston, Dec. 19, 1883.

From Harvard College

ANNUAL REPORTS

OF THE

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OF

HARVARD COLLEGE.

1883-84.

CAMBRIDGE, MASS.
PUBLISHED BY THE UNIVERSITY.
1885.

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PRESIDENT'S REPORT FOR 1883-84.

To the Board of Overseers: —

The President of the University has the honor to submit the following Report for the academic year 1883–84; namely, from Sept. 27th, 1883, to Sept. 25th, 1884: —

Three honored professors died during the year; Calvin Ellis, Jackson Professor of Clinical Medicine, on Dec. 14th; Evangelinus Apostolides Sophocles, University Professor of Ancient, Byzantine and Modern Greek, on Dec. 17th; and Ezra Abbot, Bussey Professor of New Testament Criticism and Interpretation, on March 21st.

Dr. Ellis was appointed Assistant Professor of the Theory and Practice of Physic in 1863; but for ten years before that date he had been actively engaged in medical research and teaching at the Massachusetts General Hospital and the Medical School. In 1865 he was made Adjunct Professor of Clinical Medicine at the request of the Jackson Professor, and in 1867, upon the resignation of Dr. Bowditch, he succeeded to the Jackson Professorship. Cautious, exact, conscientious, earnest, and cheerful, he was one of the best teachers of medicine the University has ever had. His daily example, as a wise and high-minded practitioner and a kindly, honorable, and disinterested man, was of great worth to the students; for they saw that these qualities were the foundation of his success as a physician, and of his wholesome influence in the Hospital, the School, and the medical profession. He was Dean of the Medical School from 1869 to 1883, and in this important office contributed with all his might to the reforms in medical education which the Faculty effected within that period. Of his strong faith in the beneficence of medical science he gave proof by leaving large bequests for the promotion of that science at the University.

Professor Sophocles was first appointed Tutor in Greek in 1842, and held the place for three years. In 1847 he was again appointed Tutor, and from that time until his death remained a member of the College Faculty, being made Assistant Professor of Greek in 1859, and Professor of Ancient, Byzantine and Modern Greek in 1860. His unique personality was an object of constant interest to the New England community in which his lot was cast, and especially to the shifting throng of young men in the midst of which he lived. He was profoundly learned in the Greek literature of all ages, and particularly in the Greek of the Christian Fathers; but was somewhat indifferent to the wealth of scholarship which Western Europe has lately brought to bear upon Greek art and letters. He was tender-hearted under a disguise of cynicism, and singularly generous under an aspect of parsimony; in his way of living and his modes of thought he seemed a simple mediaeval monk; yet he was shrewd enough in affairs to accumulate and keep safe a considerable property in modern stocks and bonds. In his last will Professor Sophocles gave enduring evidence of his fidelity in friendship, and of his love for the College which had been his home for forty years.

Professor Abbot was in the service of the University twenty-eight years,—sixteen years as Assistant Librarian (1856–1872), and twelve years (1872–1884) as Bussey Professor of New Testament Criticism and Interpretation. As a bibliographer and a Biblical scholar, Dr. Abbot's characteristics were accuracy, thoroughness, discrimination and candor. In the department of New Testament criticism he had no superior; and his name is inseparably associated with the development of Biblical science. He had the noblest qualities of the truth-loving and generous scholar—honesty, insight, humility and self-forgetfulness, and his indefatigable industry made these qualities fruitful. His character and life were simple, lofty, and serene.

It is rare that two such scholars as Professor Sophocles and Professor Abbot die at the University within the same year. Their departments of study were closely related, yet their scholarship was of different types. The one was a scholar of the seventeenth century, the other of the nineteenth; and each was the peer of the best scholars of his type. The University did not educate either of these interesting and remarkable men; but enjoyed the benefits of their presence and service during all their maturer years. To produce their like must always be the highest ambition of an academic society.

Tables of the resignations and appointments of the year will be found in the Appendix (I. and II.).

Professor James B. Thayer resigned the Royall Professorship to accept the new endowed professorship of law; and Professor Gray resigned the Story Professorship to accept the Royall. These changes were made in order that the law professorship which the Corporation are forced to leave vacant at present might be the Story, which has no endowment whatever. Professor J. Henry Thayer preferred to retire from the Corporation on his election to the Bussey Professorship of New Testament Criticism and Interpretation, that he might devote his whole time to the duties of the professorship and to kindred labors earlier undertaken. The University is indebted to Professor Thayer for seven years of faithful and valuable service as a Fellow.

The most important change made in the College during 1883–84 was the extension of the elective system to the Freshman year (see the Dean's Report, p. 85). There are now no required studies in the College except rhetoric for one year, English composition (themes and forensics), German or French for one year (whichever language was not presented by the student at the examination for admission), and a few lectures on chemistry and physics. The exercises in English composition which have long been called Forensics have been modified and brought into connection with the elective courses which the student is pursuing; so that, instead of being disputations upon topics quite foreign to his main work, they tend to become essays upon subjects to which he is devoting a great part of his time (see the Dean's Report, p. 84). Themes it is proposed to carry back from the Junior and Sophomore years to the Sophomore. The rhetoric, French or German, and the elementary scientific lectures are obviously matters which properly belong to the secondary schools; so that these few re-

maining requirements of the College course are o
and provisional character, retained in College c
secondary schools deal with them satisfactorily.
of studies opened to Freshmen is by no means
one. Only twenty-five full courses and six hal
offered them for the current year, — namely nine
Latin, four and two halves in French and Germ
half in history, three and three halves in mathema
in science; and no Freshman is allowed to take n
courses in one department. Under these restric
selection of studies made by a Freshman class (
was on the whole a conservative one.

On the practical completion of a developmen
sixty years ago, it is worth while to review the su
of the long progress from a uniform "curriculum
which permits a free choice of studies, and wh
little else than the number of studies to be pursue
year by the regular candidate for the degree, and
which graded courses of instruction within the sa
shall be pursued.

During the years 1823 and 1824 a very thoroug
the state of the University was made by two su
mittees of the Board of Overseers with the co
committee of the Corporation. The chairman of
mittee of the Overseers was Joseph Story, and
John Lowell. The report of the first committee
May 4th, 1824, and of the second Jan. 6th, 1825;
report being accompanied by documents which ex
most complete manner the condition of the Unive
to its property, foundations, statutes, instruction a
Judge Story's report recommended in outline sev
changes, among which was the following — "th
studies shall be divided into two classes; the f
all such studies as shall be indispensable to obt
the second, such in respect to which the stude
limited extent, exercise a choice which they will p
Lowell's report said nothing upon this subject
mended that classes be divided, when division sh
sary, according to proficiency; and laid before th

revised code of laws which had been prepared by the Faculty at the request of the Corporation, — a code which made no changes of importance. In January, 1825, Judge Story's report, which contemplated much greater changes than Mr. Lowell's, was adopted by the Overseers in preference to Mr. Lowell's, and sent by them to the Corporation; and the outcome of the whole discussion was a new code of laws which was adopted by the Corporation and Overseers in June, 1825. These laws provide, among other new things, for the admission to the University of persons who are not candidates for a degree (Statutes and Laws of the University in Cambridge, 1826, § 11); for the division of the instruction into departments with a professor at the head of each department responsible for its efficiency (§§ 58 and 60); for the division of classes according to proficiency (§ 61); and for the consideration, to a limited extent, of the desires of students in the arrangement of their studies (§ 63). These provisions, first suggested in an official form in Judge Story's report, contained the germs of the elective system. They originated in the Overseers and were adopted by the Corporation and Overseers against the judgment of the "Immediate Government," or Faculty, and obtained but very imperfect execution; but they gave to George Ticknor, Smith Professor of the French and Spanish Languages and Literature, the means of demonstrating during the ensuing ten years, in the single department which he organized and controlled, the admirable working of a voluntary system.

In 1824 all the studies of the College were required, except that Juniors could choose a substitute for thirty-eight lessons in Hebrew, and Seniors had a choice between chemistry and fluxions. French and Spanish were taught as "extra" subjects, and attendance at the lessons was voluntary. In 1826, after the new Statutes had gone into effect, election of studies prevailed to the following extent: — a student could attend in modern languages after the first third of the Freshman year in place of certain specified courses in Greek, Latin, topography, Hebrew, and natural science, and a Senior might also substitute natural philosophy for a part of intellectual philosophy. Election began early, but the modern languages were almost the only materials with which to effect substitutions. It was the lack of teaching force which imposed this narrow limit upon selection. The College could not provide any considerable quantity of instruction beyond that needed to fill out the regular four years' course, and the student's nominal privilege of choosing his studies could not avail much until there were more studies for him to choose from. This difficulty reappears to-day in the programme of many a small college which is ambitious to maintain a so-called elective system; the student seems to have liberty of choice, but finds only very few courses to choose from. In the department of modern languages however there were five teachers, and a considerable range of choice really existed. For several years no student was compelled to study any modern language; but the student who elected to study any language could not quit the study until he had passed a satisfactory examination. The regular students of the department were those who chose a language as a substitute for some other study; but there were also many volunteers who studied a modern language quite outside of the regular College course. By 1833 Professor Ticknor could say in his annual report: "The system of volunteer study was begun in this department in 1826 with thirteen students. The number of students embracing it has constantly increased every year; and now exceeds the number of regular students. The teachers are particularly gratified with the proficiency of these volunteer students." In that year, on the average of the three terms, the classes in the modern languages numbered 210 students, of whom 103 were volunteer students. In this enumeration, however, a student who studied more than one language was counted for every language which he pursued. There were but 212 students in the College.

In President Quincy's Report for 1830–31, written in January, 1832, he said: "In addition to a strict enforcement of the course of studies established in the University, an enlarged sphere of action has been opened for the encouragement of the spirit of voluntary study; not only by the facilities and inducements held out for the pursuit of the modern languages, beyond what the general laws of the University require, but also, recently, by the establishment of a philological department, for teaching the theory and practice of instruction, under the superintendence of Dr. Beck in the Latin, and Mr. Felton in the Greek department. . . . The institution can be considered at present in the light only of an experiment. It has commenced, however, under very favorable auspices. . . . As soon as the general arrangements of the University permit, it is also contemplated to add the mathematics to the studies of this department." There is no allusion to this subject in any of President Quincy's later reports.

In Professor Ticknor's report on his department in 1833–34 it is stated that "owing to the adoption and full application of this volunteer system, the amount of study and progress in each modern language have been greatly increased; in some sections doubled within the last eight years." In the same year Professors Beck and Felton report that they divided the Freshman class in the second term according to proficiency instead of alphabetically, — a noteworthy report, because the Faculty had not given much effect to the statute concerning division according to proficiency, except in the department of modern languages.

In 1834 the Faculty adopted, and the Corporation approved, regulations for voluntary studies, which established a minimum in mathematics, Greek, Latin, modern languages, theology, moral and intellectual philosophy, logic, and rhetoric, level to the capacity of faithful students in the lowest third of a class, and provided that students who had attained the minimum in any branch might elect the studies which they would pursue in place thereof, being formed into sections of not less than six members, without regard to classes, and having additional instruction provided for them. The minima cover about all the instruction regularly provided by the College in the departments named. Had they not, the College would have been called upon, under this scheme, for much instruction which it was in no condition to provide.

In spite of apparently progressive legislation, the College probably remained in 1835, except in the department of modern languages, very much what it was before the enactment of the Statutes of 1825. When in 1835 Professor Ticknor resigned, he wrote thus to a personal friend, — "In my own department I have succeeded entirely, but I can get these changes carried no further. As long as I hoped to advance them, I continued attached to the College; when I gave up all hope I determined to resign. . . . If, therefore, the department of the modern languages is right, the rest of the College is wrong." Professor Ticknor, who had actively and effectively promoted the legislation of 1825, was a reformer fifty years in advance of his time. Professor Longfellow, succeeding Professor Ticknor, held in the main to his methods, and the reform gradually gained new ground.

On the 26th of May, 1838, the following resolution was adopted by the Corporation: "Whereas certain changes are contemplated in the several departments of the College, — Resolved, that hereafter each department shall be separate and independent of every other, and the President shall be deemed the head of each department. And it shall be the duty of each department respectively for the time to come to recommend to the Corporation such measures, for the improvement of the studies thereof, as it may deem advisable." At the same meeting, the Corporation adopted a plan proposed by Professor Peirce for the improvement of the mathematical department. Under this plan mathematics might be discontinued at the end of the Freshman year by any student who had then accomplished the Freshman mathematics, and any student who thus discontinued mathematics might choose as a substitute natural history, civil history, chemistry, a course in geography and the use of the globes, or studies in Greek or Latin additional to the prescribed course; but in the announcement of this change a footnote warns the student that "in the early part of the coming academical year it may not be possible to provide instruction in natural history, civil history, and chemistry."

At the Corporation meeting of June 2d, 1838, provision was made for some instruction in Greek and Latin, "additional to the prescribed course," and it was ordered that the professors of mathematics, Greek, and Latin be paid eight dollars a year for every individual who should elect and actually attend the instruction given in the subjects of election in those departments respectively. These acts of the Corporation, extending the application of the principle of election, were concurred in by the Board of Overseers in the following July. The order about extra compensation was extended in October to the professor of modern languages.

Acting under the vote of May 26th, which invited departments to propose measures to the Corporation, Professors Beck and Felton proposed to President Quincy in December, 1838, "*to require of all* only the classical studies of the Freshman year. . . . It is probable . . . that a liberty of choice will increase the zeal and application of students in the classical departments, and raise materially the standard of scholarship."

This recommendation was adopted by the Corporation Aug. 19th, 1839 (the resolutions of the Corporation were not concurred in by the Overseers until the winter of 1841, the meetings of the Board being infrequent), and it was ordered "that those students who discontinue the study of Greek or Latin, shall choose as a substitute one or more of the following branches: — natural history, civil history, chemistry, geology, geography and the use of the globes, popular astronomy, modern language, modern oriental literature, or studies in either Greek or Latin which may not have been discontinued in addition to the prescribed course in such branch. The times and orders of these studies will depend on the convenience of the instructors and the decision of the Faculty, and each student will be required to engage in such a number of studies as shall in the judgment of the Faculty be sufficient reasonably to occupy his whole time." In some remarks on these resolutions which President Quincy submitted in print to the Board of Overseers most of the arguments in favor of an elective system which have since become common are stated or alluded to; but especial stress is laid upon the argument that no high standard of scholarship in any department, not even in Greek and Latin, can be attained under the system of uniform requirement. The Board of Overseers having referred the resolutions of the Corporation to a committee, Theophilus Parsons presented by order of the committee a report in which he anticipated, and stated with admirable clearness, principles which did not become indisputably the guiding principles of the Faculty and the governing boards until thirty years later. The following sentences touch a point which has not yet lost its interest: — "We regard this question as precisely the question, whether Harvard College shall or shall not become a University. In no institution intended to answer the purposes of a University, and to be called by that name, is it attempted to carry all the scholars to the same degree of advancement in all the departments of study. The reason of this is, obviously, that any such attempt must greatly retard the advancement of the whole. We hope, therefore, that our College may become, in fact, a University."

From the beginning of the year 1838–39 the Corporation encountered serious embarrassments caused by the uncertain amount of the services which instructors in the elective departments were obliged to render in order to fulfil the promises of the departments concerning choice of studies. Thus in 1839 two very pressing letters were addressed to the Corporation by Professors Beck and Felton on the subject of extra compensation promised for extra services. With obvious reluctance the Corporation finally satisfied their claim; but it must have been very trying to the Board, in those days of narrow resources, to be subject to claims for services the extent of which could not be foretold. The method of payment which gave rise to these difficulties was abolished Feb. 26th, 1842.

In August 1839 Professor Felton wrote to President Quincy, "I coincide fully with the opinion that greater freedom ought to be introduced into the studies of the University, and that the age of scholastic conformity and uniformity has gone" (College Papers, IX. 288); and Professor Pierce wrote at the same time with regard to the new arrangements in mathematics, "With regard to the success of the experiment, I regard it as complete, and as proving most decidedly the superiority of the voluntary system, and the practicability of adapting different courses of instruction to different classes of students" (College Papers, IX. 291).

In December 1839 a large committee of the Faculty (Professor Beck, chairman) made an elaborate report upon the College studies. The most important propositions in this report are as follows: "The committee give their unqualified support to the proposition of the Latin and Greek professors, viz. that those students who wish it, may, with the consent of their parents and the respective professors, discontinue the study of Latin and Greek, or of either, at the close of the

Freshman year. . . . Physics and chemistry are among those branches a thorough study of which does not, in the opinion of the committee, belong to a well-proportioned system of general education. . . . That the study of one modern language only, during each of the first three years, shall be allowed, except, perhaps, in the case of substitutes for other studies. . . . That no voluntary exercise be marked upon the scale of merit." This report was adopted by the Faculty Feb. 10th, 1840, but no evidence can be found in the College reports, catalogues or records that this plan had any immediate fruition.

According to Professor Longfellow's annual reports (the best authority) French was a required study for three years, 1839–40 to 1842–43; but the annual catalogues describe French as a required study only in 1840–41, and then place it in the Freshman year. This transitory appearance of a modern language as a required study at this early date is a noteworthy fact; for changes in the selection of studies held to be essential, and therefore required of all, are quite as important as additions to the list of studies which it is agreed should be optional.

On the 24th of May 1841, after the Overseers had approved the resolutions of the Corporation which provided that Greek, Latin, and mathematics should not be required beyond the Freshman year, the Faculty adopted and announced the following scheme of College studies, — by far the broadest plan which had been enacted up to that time: —

Freshman year.	Prescribed — mathematics, Greek, Latin, and history. Elective — none.
Sophomore year.	Prescribed — English grammar and composition, rhetoric and declamation, one modern language, and history. Elective — mathematics, Greek, Latin, natural history, civil history, chemistry, geology, geography, the use of the globes, and any modern language; so far as the means of such instruction are within the resources of the University.
Junior year.	Prescribed — English composition, one modern language, logic, declamation, physics, psychology, ethics, forensics, and history. Elective — the same as those of the Sophomore year, and a more extended course in psychology and ethics.
Senior year.	Prescribed — rhetoric, English composition, political economy, constitutional law, forensics, theology, history, and declamation. Elective — political ethics, a more extended course in physics, and any of the elective studies above enumerated.

There was appended to this scheme the followin which probably expressed the estimate put upon el by the majority of the Faculty: "In forming rank at the end of a term, there shall be deduct aggregate marks given for an *elected study* one maximum marks for each exercise in such electe that a student by only obtaining one half of th marks adds nothing to his aggregate, and by ol than half is subject to a proportionate reduction."

In 1840–41 there had been a prescribed and an course in philosophy for Juniors and Seniors, of fessor Walker spoke with approval in his annual this arrangement continued down to 1847, when remarks in his annual report, "The elective sy given up in this department." In 1844 he had the Corporation or Overseers "the expediency of the elective principle into the studies of his depa a statement made by President Quincy to the March 30, 1844, College Papers, Vol. XII. p. 77) abandonment of so much election as existed in hi from 1840 to 1847 was the result of general action Faculty and shortly to be described. Dr. Beck re report for the year 1840–41 that "At the comn the Second Term, the new system relative to volu proposed by the Corporation and approved by th was introduced so far as to divide the Sophomor classes into two parts each, of those who wished the study of Latin at the end of the Junior year, who wished to continue it through the College c several years after 1841 there is mention of the el in the annual reports of Professors Beck and Felt fessor Peirce repeats in four annual reports of the the remark: "The standard of scholarship is bel been greatly elevated in this department, since the of the new system of election." Except in the y to 1842–43, Professor Longfellow regularly state nual reports down to 1848 that "All the modern l elective." The elective principle, however, was applied in all the departments of the College; it h tained admission to the departments of physics, and rhetoric and oratory, and but temporary admission to the department of history.

The Faculty having voted on April 21, 1845, that no student be allowed to study at one time more than one modern language, unless for special reasons shown to the Faculty and by an express vote of that body, Professor Longfellow desired to have his protest entered upon the record, and then appealed to the Corporation to set aside the vote of the Faculty; but the Corporation declined to interfere on the general grounds that the Faculty was the most competent body to order the times and the amount of study for the young men at Cambridge, and that the Corporation did not feel authorized to change one part of a complicated system, all the parts of which were intimately dependent upon each other (College Papers, Vol. XIII. p. 13).

On the accession of President Everett in the spring of 1846 the scheme of College studies adopted by the Faculty in 1841 (see above) was still in force with the following modifications: Chemistry was a required study in the Freshman year instead of an elective study from the beginning of the Sophomore year; no modern language was required in either the Sophomore or the Junior year; the elective course in geology was confined to the Senior year, instead of being accessible from the beginning of the Sophomore year; no elective course in geography was provided; Story's Constitution was a required study for Juniors instead of Seniors; psychology and ethics were elective instead of required for Juniors; and political ethics were required instead of elective for Seniors. These modifications were somewhat contradictory in character, so far as the application of the elective principle was concerned, and were probably made, not in execution of any settled policy, but on various grounds of convenience. If the number of elective studies had been reasonably large, the scheme would have been a very liberal one, for election began early and the number of studies prescribed in the last three years was not large. The number of elective studies was, however, so small as practically to confine the choice of the students within narrow limits. In the twenty years between 1825–26 and 1845–46 the number of students had increased only from 234 to 279, and the number of teachers employed in the instruction of undergraduates had increased proportionately from 14 to 17. The Faculty of 1845–46 numbered but eleven persons including the President, and was of course unequal to the labor of carrying on a broad elective system.

The members of this small Faculty (it had just been reinforced by one tutor) were requested by President Everett in September 1846 to give him their opinion in writing upon the advantages and disadvantages of the system of elective studies. Several of the letters written in reply to this request (College Papers, Vol. XIV.) assume that the real subject under discussion is the abandonment of the elective system. Professors Beck, Peirce, Felton, and Longfellow are favorable to the system, Professors Beck and Felton with decision; Professor Lovering is opposed to it, Professor Channing professes complete ignorance of its working, and Dr. Walker states strongly its advantages, but finds the practical objections to it well nigh insuperable; Tutors Torrey, Merrill, and Child are opposed to it, and Tutor Hartwell favors it, but thinks the beginning of the Junior year the best time to offer a choice of studies. It appeared that the Faculty was evenly divided upon the merits of the elective system, but that those teachers who had the largest experience of it in their own departments had the most favorable opinion of it. The President threw his weight against the system. On the 19th of October two committees were appointed to prepare tabular statements of studies for the College course, — one committee, consisting of the President and Professors Walker and Lovering, to prepare a plan in which all the studies should be required, — the other, consisting of Professors Beck, Pierce, and Longfellow, a plan in which the elective system should be preserved. Both committees prepared elaborate schemes, and both were influenced by illusive expectations, — the first committee by an illusion that a new "School of Literature and Science" was to be organized for advanced study in all branches, and the second by an assumption "that one year at least will be added to the College course." The scheme for requiring all the studies carried Greek and Latin through the whole course, and mathematics through the Junior year, and prescribed for all students French, German and Spanish, each for one year. The scheme for preserving the elective system made the right of election to begin with the Junior year (instead of the Sophomore as heretofore) and to apply to the departments of Latin, Greek, mathematics, history, modern languages and botany; it made provision for the study of only two modern languages by the great body of the students; and it prohibited the student from taking more than three of the six elective studies in one year. The two plans having been discussed at several meetings of the Faculty were referred to a committee consisting of Professors Walker, Channing, Peirce, Beck, and Lovering, to report a plan by way of compromise on the principle of admitting the elective principle in the Junior and Senior years. The scheme reported by this committee was adopted unanimously by the Faculty, December 28, 1846, and although it underwent many modifications from year to year, its framework remained in use for more than twenty years. It allowed every Senior to select three from the following studies, namely, Greek, Latin, mathematics, German, Spanish, and Italian, and every Junior to select three from the same studies, Italian excepted. All other studies were prescribed; but among the prescribed studies were natural history for Freshmen and Sophomores, and French and psychology for Sophomores. The most obvious objection to the plan was that every Junior and Senior who did not pursue mathematics was obliged to study three languages during the last half of the College course, as well as during the Sophomore year. Another serious difficulty with the plan — an inevitable difficulty with all schemes of required studies for colleges — was the great number of exercises per week for each student. This number rose from sixteen in the Freshman year to twenty-three in the Senior year. In trying to include the elements of the various new subjects which were pressing for admittance into the old curriculum of classics, mathematics, and metaphysics, the Faculty had overloaded the student and restricted him to superficial attainments. In March 1848 Seniors were relieved of one elective study, and at the beginning of the year 1849 Seniors and Juniors were required to elect only two studies instead of three.

President Sparks was a decided opponent of the elective system. He came into office in February 1849, and within a year attacked the system energetically through both the Corporation and the Faculty.

As the result of conferences between committees of the Corporation and Faculty, and of discussions which took place in March and April 1850, the Faculty adopted by a vote of eight to three (Professors Beck, Longfellow, and Peirce) the following serious contraction of the liberty of election: In the Junior year the elective studies were to be Greek, Latin, mathematics, German, Italian, and Spanish, and in the Senior year Greek, Latin, mathematics, German, Spanish, and Hebrew, and no student was to take more than one of these elective studies for the year. The time saved to Juniors and Seniors by this change was filled up with required exercises. Any student might take one extra study, but could have no credit for it on the rank-lists. The reasons which seem to have prevailed with the majority of the Faculty were in good part mechanical (see President's Report for 1849–50, and Records of the College Faculty, Vol. XIII., April 8th, 1850). Under the new arrangement every student could have three exercises a day, one in the morning, one near noon, and one in the afternoon. He could also have a suitable time before each recitation to prepare for it. The earnest protest which Professor Peirce put on record against this backward step will be found in the Appendix (II.). Shortly afterwards, the practice of dividing certain classes according to proficiency was abolished, such advantages as the practice had being connected with the elective system. This close limitation of election did not last long; for in the year 1851–52 Juniors and Seniors were again permitted to select two elective studies. In his last annual report (for 1851–52) President Sparks remarks: "The voluntary system, as it has been called, is still retained to a certain extent, rather from necessity than preference. The number and variety of the studies, for which the University has provided instruction, are so large that it is impossible for any student, within the period of four years, to give such a degree of attention to them all as will enable him to acquire more than a limited and superficial knowledge from which little profit can be derived." The last sentence is an unanswerable argument for an elective system in a University.

In 1851–52, through the exertions of Professor Cooke, chemistry became a required study and has ever since held that position; but it did not become an elective study also until 1858–59. The zeal of new professors brings about either the insertion of new required studies into a programme already crowded, or the addition of new elective studies. As early as 1852 Professor Child urged that Anglo-Saxon should be made an elective study for Seniors.

The beginning of the year 1856–57 witnessed another serious curtailment of the privilege of election. French was again made an optional study, two out of the three subjects Latin, Greek, and mathematics were made required studies through the Junior year, and molecular physics was required for half the Junior year. At the same time the number of studies which a Junior or Senior could elect, and receive credit for on the rank-list, was reduced from two to one. One extra study was also allowed. Considering the gravity of this change it is remarkable that no direct vote on the reduction of the liberty of election was taken either in the Faculty or in the Corporation, and there is no allusion to the matter in the President's annual reports. A new "tabular view" was adopted — apparently without debate — by the Faculty, and approved by the Corporation; and the only point to which the attention of the Corporation seems to have been directed, when their approval was asked, was the fact that the new "view" provided for division of all the classes into smaller sections for recitation, — an improvement for which the Overseers had been asking. This was the lowest stage to which the election of studies had been reduced for many years, and it remained at this low stage until 1865–66. Some new elective studies were added within this period, but also some new restrictions were imposed upon the choice of the single study which a Senior or a Junior was allowed to select. At the beginning of 1858–59 chemistry was added to the list of Junior elective studies — a significant invasion.

At the beginning of 1862–63 patristic and modern Greek was offered for the first time as an elective study — in that year to the Junior class. On the 21st of April 1862 the Faculty voted that the number of electives in the Senior year be made smaller, and be limited to Latin, Greek, mathematics, and advanced Italian, and that Spanish and German be "extra studies." Shortly afterwards patristic and modern Greek was added to the "extra" studies of the Senior year. In the following year Italian was substituted for Spanish as a Junior elective study, and Spanish and patristic Greek were added to the Senior elective studies; but the Senior who selected patristic Greek, German, Spanish, or elementary Italian could only obtain a maximum mark of 6 in any of those studies, whereas in all other studies in College the maximum mark was 8. The working of this plan was that students who had any regard for College rank were debarred from pursuing these undervalued elective studies.

The Faculty of the year 1865–66 contained twenty members including the President, and the number of undergraduates was 414 (in 1863–64 it was 422; and in 1864–65, 379). The whole number of teachers employed in the instruction of undergraduates was only twenty-one, the proportion of teachers to students being by no means so large as it was either in 1825–26 or in 1845–46. The policy of dividing each class into small sections prevailed throughout the College; so that much of the time and strength of the teachers was consumed in hearing the same lesson recited three, or even four, times with as many different sections. For twenty years the Faculty, through all changes in its personnel, had manifested in many ways a decided distrust of the elective principle, though always maintaining it in a limited way. The Faculty of 1865–66 was no more able than the Faculty of 1845–46 to provide a large amount of instruction over and above what was needed to fill out a uniform four years' course; yet without explanations or prolonged discussions it suddenly, on the 24th of April, 1865, by a vote of seven to four (four other members present but not voting) ordered that botany be made an elective study in the Junior year, that Greek in that year be an elective instead of a required study, and that Juniors be allowed two elective studies instead of one. At a meeting on May 8th the Faculty further voted that German should be introduced as a required study into the second term of the Sophomore year, and that Roman history, Greek history and philosophy, and German should be added to the elective studies of the Junior year. Subsequently, Greek poetry was added as an elective study. Thus the Faculty set out upon a road which they have steadily followed ever since. Year by year they have endeavored to reduce the amount of the required studies, to increase correspondingly the amount of the elective studies, and to add to the number and variety of the courses of instruction annually offered to the choice of the student.

In the ensuing year only one change was made in the elective system, but that one was in the right direction. It was voted June 25th, 1866, that Seniors might study elementary German with the Juniors and be marked on the ordinary scale, and that advanced German should be substituted for advanced Italian in the electives of the Senior year. At the meeting of April 16th, 1866, the Faculty had appointed a committee of which President Hill was chairman "to consider the feasibility of increasing the amount of elective study in the Senior year." But before that committee had made any report, the Corporation, at the instance of their standing committee on Studies and Discipline, passed on March 26th the following vote "that in the judgment of the Corporation, it is desirable to give to the students of the Junior and Senior classes a larger election of studies, both in subjects and in quantity, with the view of raising the standard of scholarship in every department as well as of diminishing the number of studies and recitations required of each student. And that for this purpose the Faculty be recommended to revise the course of study for those years, and be requested to report in general to the Corporation the changes which they may think it desirable to make."

To better make known to the Faculty the views of the Corporation, the committee on Studies and Discipline had a formal conference with the Faculty, and private conversations with several members of the Board. The Faculty committee first made a report on October 15th; but on the 22d their report was recommitted to a larger committee consisting of the President and Professors Peirce, Lovering, Cooke, Lane, Goodwin, Child, Torrey, Bowen, and Lowell, being all the full professors in the Faculty, except Professors Peabody and Sophocles. At the next meeting this committee was authorized "to consider the whole course of College studies, and to invite Dr. Gray or Professor J. Wyman to meet with them." On the 21st of January, 1867, the Faculty adopted and referred to the Corporation the following scheme of studies, which had been reported by this committee after deliberations which extended over three months.

YEAR.		
Freshman.	First term.	Mathematics, Latin and Greek, each 4 hours a week. French and ethics, each 2 hours a week. Elocution once a week.
	Second "	Mathematics, Latin and Greek, each 4 hours a week. Greek history in French, 2 hours a week. Elocution once a week.
Sophomore.		Required studies — chemistry and German, 2 hours a week the whole year. Roman history, psychology and rhetoric, each 2 hours a week, half the year. Elective studies — Latin, Greek, mathematics, and applied mathematics; each 3 hours a week, and each student must take two studies.
Junior.		Required studies — physics, 3 hours a week the whole year. Logic and metaphysics, each 2 hours a week half the year. Elective studies — Latin, Greek, ancient history, mathematics, chemistry, natural history, German, English; each 3 hours a week, and each student must take two and may take three. Italian and Spanish, as extras, and as a condition of being allowed to continue the study of them in the Senior year with a mark of 8.
Senior.		Required studies — 1st Term. Political economy 2 hours a week, and history 3 hours a week. 2d Term. Philosophy 2 hours, history 2 hours, and ethics 1 hour a week. Elective studies — Latin, Greek, mathematics, physics, chemical physics, philosophy, history and modern languages (only for advanced students), each 3 hours a week, and each student must take two, and may take three or give the time of three to two.

The committee also recommended that special honors at graduation be awarded to those who excel in special departments or groups of studies. This pregnant suggestion has been gradually developed into the present system of honors and highest honors at graduation for great proficiency in any one of thirteen different departments of study. By promoting specialization of study this system has tended strongly to multiply elective courses in every department, and to raise the level of instruction in all departments.

The Corporation was not satisfied with the result at which the Faculty had arrived; but on the 13th of April 1867, "the standing committee on Studies and Discipline respectfully report that the order of studies proposed by the Faculty of the Academic Department seems to them better than the existing order, and they recommend the Corporation to assent to its adoption"; and the Corporation gave their assent.

For the year 1868–69 the changes made in the scheme above described were not large. In the elective studies for Seniors, physics was dropped and English added. English (two hours a week) was added to the elective studies for Sophomores; and that class was required to choose elective studies enough to occupy eight hours a week, and for this purpose Latin, Greek, and mathematics were offered in two-hour and four-hour courses.

At the beginning of the year 1869–70 a vote of the Corporation raising the tuition fee from $104 to $150 a year took effect; and as the number of students suffered no diminution, but on the contrary increased from 529 to 563, the Corporation suddenly found their income from fees increased by about $30,000. In 1870 or 1871 large gifts applicable to salaries were also received. These new resources were devoted chiefly to raising salaries and increasing the number of teachers. A rapid extension and expansion of the College instruction was the result. The Faculty year by year pushed back required studies into the earlier years of the course, diminished the number of required studies, and added new elective courses as fast as the Corporation could undertake to pay new salaries. Thus in 1872 all required studies had disappeared from the Senior year, in 1879 from the Junior year, and in 1884 from the Sophomore. The accompanying table exhibits the steps of this process: —

	Senior.		Junior.		Sophomore.		Freshman.	
	Required.	Elective.	Required.	Elective.	Required.	Elective.	Required.	Elective.
1853–1855	10	6	10	6	all	none	all	none
1856–1864	13	3*	13	3*	“	“	“	“
1865–1866	10	3	9	6	“	“	“	“
1867–1868	6	6 or 9	6	6 or 9	7	6	“	“
1868–1869	6	6 or 9	6	6 or 9	6	8	“	“
1870	½	12	6	9	5½	8	“	“
1871	½	12	6	9	7½	8	“	“
1872–1874	0	12	6	9	8	8	“	“
1875	0	12	3	11	7½	8	“	“
1876–1878	0	12	2	12	4	10	“	“
1879–1880	0	12	0	14	2	12	“	“
1881–1884	0	12	0	12	2	12	“	“
1884	0	12	0	12	0	12	7	9

* With 3 as extra.

The increase in the number of elective courses may be inferred from the figures given in the following table. A more detailed exhibit for the last twelve years will be found in the Dean's Report (p. 83).

Number of exercises per week offered in elective courses.

In 1871–72 . . .	168.	In 1876–77 . . .	255.	In 1881–82 . . .	347.
" 1872–73 . . .	197.	" 1877–78 . . .	262.	" 1882–83 . . .	351½.
" 1873–74 . . .	196.	" 1878–79 . . .	308.	" 1883–84 . . .	373.
" 1874–75 . . .	228.	" 1879–80 . . .	337.	" 1884–85 . . .	382.
" 1875–76 . . .	240.	" 1880–81 . . .	356.		

It was on December 20th, 1869, that the Faculty voted that there should be no required studies in the Senior year after the end of the current year: "provided that the written exercises be not included in the term required studies"; and within two months of this decided action the Board of Overseers adopted the following resolution (Feb. 15th, 1870), which the President was requested to communicate to the College Faculty: "Resolved, that the Overseers approve the elective system which has already been introduced into the College and recommend its liberal extension." The Corporation, Overseers, and Faculty have coöperated with perfect accord since 1866 in widening the range of the student's choice of studies, and increasing the number and variety of the graded courses of instruction which are offered in the different departments. Every spring the Faculty through a large committee prepares a list of courses for the ensuing year, and every spring the Corporation is called upon to decide how much new expenditure for salaries they will undertake for the ensuing year. Every winter a complete statement of the new studies, and of the changes and improvements in the arrangement of studies made or prepared during the preceding academic year, is laid before the Overseers in the Dean's annual report.

It was sixty years ago last May that Judge Story's remarkable report was read to the Board of Overseers. The experience of Harvard College during the long transition from a uniform required curriculum to a regulated freedom in choice of studies may, perhaps, be useful to other institutions which aspire to become universities; for they must advance over the same road, although they need not be so long upon the way.

The code of "Statutes and Laws" which was adopted by the Corporation and Overseers in 1825 contained the following statute which was wholly new: "§ 11. The University is open to persons who are not candidates for a degree and who desire to study in particular departments only: Provided that such persons have a good moral character; that their previous acquisitions be such as are now demanded of students before admission, so far as the studies proposed to be pursued shall require; and that they be subject to all the laws of the University in regard to diligence and good conduct." A provision of this sort had been suggested in the following passage of Judge Story's report, May 4th, 1824: "With the view of meeting the demands of our country for scientific knowledge in the mechanical and useful arts, the Committee further propose, that provision should be made for the admission and instruction of students in the University, who may not wish to receive a degree, but to pursue some particular studies to qualify them for scientific and mechanical employments, and the active business of life. Such students to have a right to choose their own studies, and upon passing through the regular, prescribed course with the approbation of the Government, to be entitled to a certificate stating their character and qualifications." Professor Ticknor attached great importance to this opening of the College to all who wished to obtain any of the instruction which it offered, and it is highly probable that he suggested the passage just cited from Judge Story's report. In his "Remarks on changes lately proposed or adopted in Harvard University" (Boston, 1825), Professor Ticknor says, "And it is at once the duty and the interest of a large institution like Cambridge to meet this demand [the demand for "a liberal education for many persons in all classes of the community"]; to make its resources minister freely to a much wider usefulness than is now thought of; and to extend effectual instruction to portions of society that now never resort there; for, while it is conferring all these benefits, it will, of course, be increased in the number of its students, and be strengthened in the interests and good will of the community, by having its basis so much more broadly and firmly laid in the very constitution of our society." The Report made to the Overseers by Mr. Lowell, Jan. 6th, 1825, did not refer to this subject; but the Overseers themselves acted upon Judge Story's suggestion, and the statute cited above was incorporated in the new code. The students who were admitted to the College under this statute came to be known as University students. There were never many of them. From 1828 to 1847 inclusive, the average number in attendance was three (see table, Appendix IV.). They felt themselves in a position of inferiority, and the College as a whole, officers and students, did not much regard them. As there was no instruction given in the College which was not elementary in its character, except perhaps in the mathematical department, it was not possible that a University student should be an advanced student. He was only a student who took elementary instruction in fewer branches than the regular students. In short the statute concerning persons not candidates for a degree was a thing for the University to grow up to, but which could hardly bear immediate fruit.

In 1847 the Faculty, acting upon the suggestion of a committee of which President Everett was chairman (College Papers, Vol. XV. p. 154), recommended its repeal; and repealed it forthwith was. The reasons given for the repeal were, — first, that the number of University students had at all times been small, and that the greater number of them had been young men who were desirous of entering College, but were not fit; and secondly, that the foundation of the Scientific School had made ample provision for the class of young men supposed to have been originally contemplated when the statute was adopted.

It was in 1847 that the first students entered the Scientific School; and for three years at least all members of the School were "special" students, and were so designated in the annual catalogues. No degree was offered in the School until 1851. There was no entrance examination at all until 1853, and then only in the department of Engineering; two years later the Chemical Department also instituted a slight examination for admission. The number and choice of studies to be pursued were optional, and attendance on lectures and recitations was voluntary. None of the members of the School up to 1850 were candidates for a degree; so that President Everett was quite right in saying that the Scientific School, as it was originally planned, could receive that class of students which § 11 of the Statutes of 1825 was intended to provide for. But in process of time the Scientific School itself became more highly organized, with examinations for admission, elaborate courses of study leading to the degree of Bachelor of Science, and periodical examinations in the subjects of these courses. Moreover the School never embraced the classics, philosophy or history, as President Everett in 1847 supposed that it would. For these reasons it did not continue to answer the purposes of the repealed statute. After that repeal no persons were distinctly recognized by the statutes as students except candidates for a degree and resident graduates.

From 1850 to 1869 the only students who had no legal status as members of the University were a few students at the Observatory, and in the last few years of that period a few persons attending "University Lectures" upon payment of a fee for each course. In 1869, however, special students, that is students who avowedly were not candidates for a degree, appeared in the Divinity School, and the number of persons attending "University Lectures" increased (see Appendix IV.). Soon after the requirements for the degree of the Scientific School, including a general admission examination (1874), were increased and systematically enforced, students designated as special appeared anew in that School; and in 1877 this class of students appeared in the Law School, because in that year an examination for admission was instituted.

In 1876 (March 27th and April 17th) the College Faculty, with the approbation of the Corporation (April 24th), opened the elective courses of study "to persons not less than twenty-one years, who shall satisfy the Faculty of their fitness to pursue the particular courses they elect, although they have not passed the usual examinations for admission to College, and do not propose to be candidates for the degree of Bachelor of Arts." In 1881 the restriction as to age was removed, and the prescribed courses as well as the elective were opened to this class of students. Up to the year 1882 these persons had been called "unmatriculated" students; they were thereafter called "special" students. At the time this action was taken by the

Faculty and Corporation, the College was living
which had last been revised in 1866, and the 3
these statutes was as follows: "The qualificatio
sion shall from time to time be determined by
subject to the approbation of the Corporation"; b
tion admission undoubtedly meant admission to
candidate for the degree of Bachelor of Arts. C
January, 1877, a new body of statutes, replacin
statutes, was finally adopted by the governing boa
after agreement to omit all definition of the powe
the several Faculties, — a definition upon which t
had failed to agree after patient endeavors, first
1871, and then in 1876. The bulk of the new st
more than one eighth of the bulk of the statute
superseded, and many topics which the old statu
at length were not even alluded to in the new.
attempt in the new statutes to define the term
there was no allusion in them to resident gradua
dates for a degree, to unmatriculated students
attending the summer courses, or to special st
Scientific and Divinity Schools, although all th
persons were actually enrolled as members of t
when the new statutes were adopted.

The number of students in the University not
any degree and not directly recognized in the st
1883–84, 182 and in 1884–85 is 166 (for the d
departments see Appendix VII.). The quality of
is very various, but many of them are mature
already well-trained and are pursuing advanced s
1877 even resident graduates have not been pr
statute as they used to be, unless they happen to
for degrees, which often is not the case. The re
ates not candidates for a degree are generally
members of any university; in 1883–84 one
were graduates of Harvard University, and one
institutions; in 1884–85 three fifths are gradu
institutions. Among the special students in the
Law Schools are always to be found graduates o
other colleges (eight out of thirty-four in 1883–8

of thirty-two in 1884–85). Most of the persons who resort to the summer courses of instruction are teachers in schools or colleges, and many of them already hold some degree. Two special students appeared in 1884–85 in the Veterinary School, one a graduate of Harvard College, the other of another veterinary school. The presence of special students in the Scientific School is nothing new; for from the first a considerable proportion of the members of that School have not been candidates for the degree. It is the special students of the College into whose quality it is most interesting to inquire. In the ninth year (1884) from the starting of this experiment 69 special students were registered as members of the College, 24 of whom entered in a previous year. The average age of these students at the time of their admission was 19 years 9½ months. They were therefore more than a year older on the average than the regular students of the same College standing. From the carefully prepared tables in the Dean's Reports for 1882–83 (p. 49) and 1883–84 (p. 80), exhibiting the work of the special students, it appears that some achieve an extraordinary amount of work, while others attempt little, and complete less. On comparing the scholarship of the fifty-two special students who made a record in 1883–84 with the scholarship of the Freshman class in the same year as exhibited in the annual rank-list, it appears that

Of the special students 8 per cent earned an average mark of 90% or over.
" " Freshmen 5 " " " " " " " " " "
" " special students 17 " " " " " " " 80% " "
" " Freshmen 16½ " " " " " " " " " "
" " special students 27 " " " " " " " 70% " "
" " Freshmen 37 " " " " " " " " " "
" " special students 63 " " " " " " " 50% " "
" " Freshmen 77 " " " " " " " " " "

That is, there was a larger percentage of very good scholars among the special students than among the Freshmen in 1883–84, and a smaller percentage of fair and passable scholars. They had the great advantage over the Freshmen of choosing their studies. Since the Freshmen have now gained this privilege the current year may possibly show different results. A few special students, who wish to get transferred to College classes with advanced standing, succeed each year in accomplishing their object (in 1882–83, ten; in 1883–84, five). A larger proportion of special students than of regular students come from distant parts of the country. Of the College special students a decided majority came from beyond New England both in 1882–83 and in 1883–84; yet it would be unsafe to infer that this larger proportional resort of special students to the University from beyond the Hudson was due to the comparative lack of facilities for obtaining a thorough preparation for college in those states; for the experience of the principal German universities indicates that even in a country where secondary education has long been well organized and diffused, large numbers of special students continue to attend university instruction, particularly in large cities.

On the whole it appears that the provisions made for special students in the different departments of the University are answering a useful purpose; but it also appears that since 1847 there has been no authority, derived from the statutes, for the enrollment of any students not candidates for a degree, except that resident graduates not candidates for a degree were provided for by statute down to 1877. The statutes of 1877 are silent upon the subject; although there were 89 such students enumerated in the Catalogue for 1876–77; and although the last action of the governing boards about students not candidates for a degree had been to repeal in 1847 a statute which for twenty-two years had explicitly recognized them as members of the University.

The changes made in the requirements for admission to the College during the last fifteen years have not made admission more difficult. The percentage of candidates who are admitted is increasing slightly, and the percentage admitted unconditionally is increasing considerably (Dean's Report, p. 53). In 1884 one half of the candidates admitted entered without "conditions." Improvements made in school methods of teaching, and in the plan and method of the examinations themselves, account for this gratifying result. On the other hand the results of the preliminary examination in 1884 were not quite as good as usual.

The Dean points out (p. 51) that the "beneficiary" funds are still insufficient to meet the most pressing needs of the meritorious young men who are unsuccessful in the competition for scholarships. He also reports (p. 56) that the tendency of the Faculty is to cease using the penalty of suspension, and to resort instead to an absolute dismission, whenever warning and probation have proved ineffectual.

The increasing use made of the Hemenway Gymnasium can be roughly estimated by the number of lockers leased in successive years. Some lockers however are used by two persons.

Year	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.
Lockers leased .	474.	580.	591.	809.	837.	901.

Of the students who now hold lockers at the Gymnasium rather more than one sixth have never been examined by the Director, — namely :

	Never examined.			
Of the class of 1888 . . .	55,	of whom	18	did not keep the appointment.
“ “ “ “ 1887 . . .	39,	“ “	6	“ “ “ “ “
“ “ “ “ 1886 . . .	15,	“ “	1	“ “ “ “ “
“ “ “ “ 1885 . . .	11,	“ “	1	“ “ “ “ “
Special students	11,	“ “	8	“ “ “ “ “
Scientific “	8,	“ “	2	“ “ “ “ “
Law “	18,	“ “	4	“ “ “ “ “
Divinity “	1			
Medical “	1			
	159	“ “	35	“ “ “ “ “

The number of applications for examination in 1883–84 was 582 ; in the current year, to December 20th, 546, of which 469 had been answered and the desired examinations had been made by that date. The Gymnasium is of greater service to weak, undeveloped persons than to those already strong ; it is of greater use as a means of preserving good general health, and obtaining moderate and symmetrical muscular development, than as a means of training athletes. Yet it is also very serviceable to the comparatively small number of young men who are ambitious to excel in particular sports or contests ; for it is a well-recognized fact that general and harmonious development is an important element of success even in games or feats which require special aptitude and some peculiar muscular or nervous power.

Some of the inter-collegiate athletic contests last year gave grave offense to many persons who have heretofore supported them and believed that while they did some harm, they did more good. In particular the game of foot-ball was played in such a brutal and dishonorable way that the Faculty, after waiting two seasons to see if the players could not reform the game themselves, have been obliged to prohibit inter-collegiate games of foot-ball altogether. It is very improbable that a game which involves violent personal collision between opposing players can ever be made a good inter-collegiate game. None of the popular games or contests which have proved long-lived and respectable, like cricket, tennis, fencing, shooting at a mark, rowing, sailing, hunting, jumping, and racing on foot, horseback, or bicycle, involve any bodily collision between contestants. Boxing and wrestling, which do require such personal collision, are very apt to degenerate just as foot-ball has done. An ill effect of some of the inter-collegiate contests is their tendency to restrict the number of men in College who practice the competitive sports. The keenness of the competition creates a high standard of excellence, and persons who know that they cannot reach that standard cease to play. The athletic sports ought to cultivate moral as well as physical courage, fair-dealing and the sense of honor. If any form of unfaithfulness, unfairness, or meanness is tolerated in them, they become sources of wide-spreading moral corruption. If students do not find their sense of honor cultivated and refined by their College life, they may be sure that their education is failing at its most vital point.

Five out of the six professors who give instruction in the Divinity School have been appointed within five years, Professor Everett being the only teacher in the School whose appointment antedates January 1st, 1880. The Dean states in his Report (p. 94) how these five places have been filled. The result is that of the six professors, two are Unitarian ministers, one a Unitarian layman, two Baptist ministers, and one an Orthodox Congregationalist minister. There is no more harmonious Faculty in the University, and none more completely devoted to the unbiased search for truth. No denominational differences have ever been perceptible in Faculty discussions upon studies and discipline, and no differences of opinion have arisen concerning the award of scholarships, or other beneficiary aid, to meritorious students of different denominational connections. In view of the great change in the constitution of the Faculty and the denominational relations of the School since 1879 the Dean calls attention to the understanding which was practically entered into with the subscribers to the new endowment of 1879, — namely, that Unitarian doctrines would always be entitled to respectful exposition in the School, and that to properly expound these doctrines at least two professors would always be needed, one of whom should be a professor of theology. Since the endowment of the School has all been provided by Unitarians, these propositions seem eminently reasonable; and it is difficult to imagine circumstances in which they could fail to be carried out by the Corporation and Overseers, unless indeed the Unitarian denomination should die without offspring or designated heirs, or should cease to furnish scholars competent to present its own doctrines in professorial chairs.

The Dean also reviews the successive measures by which the quality of the students of this School has been so much improved that they now constitute the most highly educated body of professional students connected with the University, and are distinguished for capacity, enthusiasm, and devotion to duty. During this gradual raising of the standards for admission and graduation, the number of students, instead of diminishing, has increased a little, the number having been greater during the past five years than in any other five years out of the past thirty, except during a period including the three years 1869–72, when a number of young men who had been connected with a short-lived private school for the ministry in Boston suddenly entered the Divinity School (see Appendix V.). Unfortunately the Faculty had in 1868–69 been persuaded to lower their requirements for admission, so that young men could enter the School without any knowledge of Latin and Greek. In 1869–70 the Faculty corrected this error and restored the former requirements, but in that one year serious injury was inflicted upon the reputation of the School.

What the ministry needs to-day in all denor curacy of knowledge, clearness of thought, cand and patience which come with habits of thoro burning desire to serve their fellow-men. Al the student learns in the Divinity School, if s lies; for they are incessantly inculcated there example.

The small deficit which the School incurr (Treasurer's Statement, p. 5) was caused by ditures upon the building, and will not recur the School had a small fire-proof building near to contain a book-room, reading-room, and fou rooms, it would be fairly equipped for its work. gift, lately received from Mrs. Ezra Abbot, of t of Dr. Abbot's valuable collection of books make fire-proof book-room more urgent than ever.

The number of students in the Law Schoo interesting matter, because the School has but ment, apart from its admirable building, and or at least three fifths of its whole income from stu imposing an admission examination in 1877 and raising the full term of residence to three years, no small pecuniary risk, and the friends of th scanned with some anxiety the statistics which a in the Dean's Report the effects of these very re ures. Within the same period discussions have to the entire wisdom of the selection of subject of instruction at the School, and as to the nat possible appointments to professorial chairs. however well-conducted and fruitful, do not for encourage the resort of students to the school sion, particularly in a country which is over schools of law. It is therefore with especial s the Faculty have seen the decline in the numb since 1877–78 reach its limit in five years. Th ber of students in 1883–84 was larger by elev preceding year, and the number in attendance th is larger than in 1883–84. The effect of the ac ination has been to increase the proportion of College graduates in the whole number of students, and to improve the quality of the School at the expense of its numbers. The Dean points out (p. 106) that the extension of the full course to three years has not added much to the average length of the students' residence at the School (from 1.35 years in the seven years preceding 1877–78 to 1.52 years in the seven years from 1877–78 to 1883–84 both inclusive); for while many students have remained longer, many have remained a shorter time, than they would have under the former requirement of two years' residence.

If the number of students had not increased since 1882–83 the School would now be in straits; for its expenses in Austin Hall are about $1500 a year greater than they were in Dane Hall, and the small savings of the School, laid up before 1882–83, have been necessarily used to meet the expenses of moving into and furnishing (in part) Austin Hall.

Seven eighths of the Law students live in Cambridge within easy walk of the Law Library, and board near by; and this is undoubtedly the best way for a student in this School to live. Nevertheless a young man can get most of the advantages of the School, and do a hard day's study every day, and yet live at some distance from Cambridge. The lectures are all delivered between 9 A.M. and 4 P.M., and Austin Hall contains, what Dane Hall did not, every comfort for a student who has no room in Cambridge, and spends the whole day at the Hall. The attention of young men who can not afford to live in Cambridge, or who are obliged for family reasons to live at home, should be directed to this mode of attending the School.

The great event of the year in the Medical School was the occupation of the new building, which was dedicated to medical teaching and the advancement of medical science and art with appropriate ceremonies on the 17th of October 1883. The sum of $17,934.63, which had to be taken from the savings of the School Aug. 31st, 1884, to balance the deficit of the year 1883–84 (Treasurer's Statement, p. 5), represents with sufficient precision the excess of the cost of the land, building, fittings, and furniture over the proceeds of the two public subscriptions therefor. Apart from extraordinary expenses connected with the building, the School would have had a small surplus in 1883–84. The building fulfils the highest expectations as to spaciousness, convenience and serviceableness, and also as to its good influence upon the instruction given in the School. The ample laboratories encourage teachers to offer and students to seek practical instruction, and they also stimulate medical research. About $6000 a year is now paid to demonstrators, laboratory instructors, and assistants, in order that the laboratory work of the students may be properly supervised. The annual expenses of the various collections and laboratories, including servants' wages, amount to nearly $8000 a year, without counting the cost of heat and light. The Dean's Report (p. 109) makes mention of the scientific productiveness of these laboratories in the first year they were occupied, and expresses a well-founded hope of their being of great service to the students and the public in the future. They ought to be endowed; so that medical investigations could be carried on in them continually with every aid which chemistry and physics can supply. Mankind has much to hope from the assiduous prosecution of physiological, pathological, histological, and embryological inquiries.

The Medical School has but three professorships which have any endowment, and these three are very inadequately endowed. It has no professorship of the all-important subject of public health. Fifty-seven persons are now connected with the School as teachers or assistants, of whom only five were connected with the School fifteen years ago. The fourth-year instruction is more and more abundant and satisfactory, and the number of fourth-year students gradually increases; but the Faculty would be much aided in their endeavor to prolong the course of medical instruction to four years if the College proper could reduce the time ordinarily spent in obtaining the degree of Bachelor of Arts from four years to three; or, indeed, if the undergraduates should get into the habit of availing themselves in due season of the facilities already provided for abbreviating the College course (see Catalogue for 1884–85 p. 71). Parents complain that their sons who spend four years in the School are not ready to practice before they are twenty-six or twenty-seven years old. Since the medical course is too short at the best, time must be saved, if anywhere, upon the school course and the college course. If young men were ready for college at eighteen, and obtained the degree of Bachelor of Arts at twenty-one, they would be ready to practice medicine at twenty-five, or twenty-six at the latest.

The Law School feels the same difficulty. Indeed, since thorough professional training becomes more and more important to success in the learned professions, the time devoted to professional study will probably reach at last the European limit of five years. Under such conditions the degree of Bachelor of Arts might cease to be taken by candidates for the learned professions, unless it could be obtained earlier than now.

For five years past the number of students in the Dental School has steadily increased. By favor of the Medical Faculty, the School has occupied since the summer of 1883 excellent quarters in the North Grove St. Building; and since the current year began its house No. 50 Allen St. has been sold. The debt of the School is thus reduced to about $6000, and as a partial offset to this debt the School has its Subscription Fund which amounted Aug. 31st, 1884, to $1385.66. The Faculty has been strengthened by adding to it three graduates of the School who give instruction in dental specialties.

The Bussey Institution is indebted to Professor Storer for indispensable services, which have been rendered without any salary for two years past, and for a salary of $500 a year during three years preceding. Besides delivering his stated courses of lectures, he exercises a general supervision over the farm, buildings, and accounts. In spite of the fact that the proceeds of grass sold have always been spent for manure and so returned to the farm, many of the fields are in bad condition. Much labor and several years will be needed to bring up the farm to the condition contemplated by Mr. Bussey. The object in view is to make the farm support itself, and to furnish to students practical illustration of all the processes of intelligent agriculture in this climate. The boarding of animals at the farm is an essential part of this policy, and a good beginning was made in this business last year. The connection between the Bussey Institution and the Veterinary School continues to be useful to both departments.

The City of Boston made good progress during the season of 1884 with the construction of the driveways which it has undertaken to provide in the Arboretum, all its work being done in the most substantial and permanent manner. The main driveway between Centre and South Streets is nearly finished, and will soon be opened to the public; but it would not be prudent to attempt permanent planting in connection with this driveway, until all the grading in its immediate vicinity is finished. With the exception of about 3000 plants set out during 1884 in permanent bounding plantations 2397 feet long and from 25 to 90 feet wide, the young trees and shrubs raised for the Arboretum still remain in nurseries. Plans are now in preparation for the permanent planting of the Arboretum in a natural arrangement by orders and genera, and $12,000 have been accumulated from the income of the James Arnold Fund to enable the Director to make the permanent plantations rapidly, whenever the condition of the work undertaken by the City shall warrant extensive planting. The University is more than ready to fulfil its part of the contract with the City, having a large stock of young trees and shrubs in great variety and thriving condition waiting to be transplanted to permanent sites. The Arboretum is to be a museum of living specimens of all the trees, shrubs, and herbaceous plants which will grow there in the open air. The interest or beauty which it possesses will be that of a scientific collection arranged for purposes of instruction, and not that of an ornamental park or garden.

Professor Lyman's second Report upon the School of Veterinary Medicine gives a full account of the first year of the School's existence. The instruction to be provided in the second year of the course was organized during last summer and is now in progress. It seems probable that the School will number at least thirty members when all the years of the three-years' course are represented by classes. A small number of good special students may also be looked for. The Hospital has been decidedly successful, both pecuniarily and in the treatment of injuries and diseases. If it had been possible to collect promptly all the bills due to the Hospital, the annual receipts of the School and Hospital together would have met all the annual charges including salaries, rent, and taxes. The extreme inconvenience to the students of having part of the instruction given at the Bussey Institution during the year 1883–84 compelled the Corporation to sanction the expenditure of about $11,000 in making an addition to the Hospital, which should contain sufficient accommodations for the anatomical and clinical instruction. This additional building is now finished and in use, and proves to be of great advantage to the School.

It is not to be expected that the Hospital and School should be self-supporting, even if the hospital work continue to be confined to paying patients; and it is not the interest of the School that the students should fail to receive the instruction to be derived from the large number of cases which free cliniques would bring before them. The wards of the largest hospitals for men and women are insufficient for the best instruction of medical students; out-patient departments are necessary adjuncts. That a hospital for human beings could support itself nobody ever imagined.

There are two ways of putting the Veterinary School and Hospital upon a proper footing; — the best way would be to procure for it an endowment of from $40,000 to $50,000; so that the necessary lands and building should become the property of the School; the second way would be to maintain for it a body of not fewer than 500 annual subscribers paying $10.00 apiece. The establishment had 130 such subscribers in 1883–84. Since the subscribers are all entitled to certain services, and a part of them make use of their privileges, the income received from subscribers is not unencumbered. One of these two methods must be resorted to before long, if the School and Hospital are to do the best work possible for the community. In connection with the veterinary establishment and the Bussey Institution there is excellent opportunity for experimental research upon animals — a field of scientific inquiry which promises results useful to both animals and men. Researches of this nature, however, require either endowment or government support.

As regards the number of volumes annually added to the collection, and the use made of the books, the College Library is in a very satisfactory condition. The grave problem in the Library is the catalogue. Before the middle of the past year the Library Council caused careful plans and estimates to be made with a view of cataloguing on the "short cards" each year the annual accessions and in addition a considerable number of the books received before 1860 or of those received in recent years, which have never been entered upon the "short-card" catalogue. The object of the Council was to obtain in the course of five or six years one complete catalogue of the books in the Library. The plans and estimates seeming to show that this object could be attained, the Council adopted them, and recommended to the Corporation that an increased expenditure upon the catalogue be persevered in for a term of years. The increase of salaries and wages in the Library in 1883–84 was $3366, chiefly for wages of persons employed in the ordering and cataloguing departments; and yet the increased force barely succeeded in keeping up with the accessions (bound volumes) and cataloguing, on authors' cards alone, 2356 titles selected out of the arrears. The rate of progress was better in the last half of the year than in the first half, but does not promise a fulfilment of the expectations of the Council. To order, collate, catalogue, and shelve each volume of the annual accessions seems now to cost, on the average, about one dollar, a sum which does not differ much from the commonly received rough estimates of the combined cost of these various operations in other large libraries. The whole subject of the catalogues needs further investigation at the hands of the Council.

Messrs. Van Brunt and Howe prepared during the year working drawings and estimates for reconstructing in a fireproof way the whole interior of the original Gore Hall. The greater part of the building was to be converted into an iron book-stack; but a large and well-lighted reading-room was provided, together with sufficient spaces for the catalogues and the delivery desks. The estimated cost of the alterations — $60,000 — obliged the Corporation to postpone action on the subject. The Gore Annuity Fund will ultimately be available for this purpose; but it amounts to only $21,000 and was still chargeable in 1883–84 with annuities to the amount of $842.45. The plans of Messrs. Van Brunt and Howe for the alterations of the old building were very attractive, and from every point of view would have effected a great improvement upon the present condition of things; but it would be a better general plan to convert the old Gore Hall wholly into a fireproof book-stack, and to build a new reading-room, situated on the north side of Gore Hall, and so slightly attached to it that no reasonable objection could be taken to lighting the room in the evening. Such a reading-room ought to have seats for at least 250 persons, and should be provided with ample coatrooms and dressing-rooms, in order that students who had no rooms in Cambridge might find themselves comfortably provided for at the reading-room during the whole working day. The University needs to take more thought for day-students than it has heretofore; for that class of students is increasing, and ought to increase with the constant development of the means of easy access to Cambridge from the surrounding cities and towns.

The activity of the scientific establishments of the University was well maintained during 1883–84, and the number of publications made by them during the year was very large; but they were scattered, as usual, in various scientific journals both American and European, in the Proceedings of the American Academy of Arts and Sciences, and of the Boston Society of Natural History, and in the Bulletin and Memoirs of the Museum of Comparative Zoölogy, and the Annals of the Observatory. Publication through these various journals, societies, and special serials is on the whole more satisfactory to the different departments than exclusive publication through a channel, or channels, provided by the University, the one objection to the method being that the productiveness of the

University in original scientific investigations easily escapes an observation which is only casual or hasty.

From the Herbarium was issued (p. 136) the second part of the "Synoptical Flora of North America," a monumental work in which the Director is embodying the observations and studies of a life-time. It is much to be wished that Dr. Gray's suggestion, to the effect that the temporary employment of an assistant in the Herbarium would increase his chances of seeing this national work completed, may fall under the eye of some person who would like to render this great service to American botany.

Under the judicious care of Professor Goodale the Botanic Garden improved greatly in 1883–84. His report exhibits (p. 137) a perfect comprehension of the uses of the Garden, and of the proper methods of an administration at once economical and fruitful. Three lovers of horticulture united to give the Garden excellent new greenhouses at a cost of $4800.

When Professor Lovering's collection of physical apparatus was transferred last summer from Harvard Hall to the Jefferson Physical Laboratory, the botanical department succeeded, by vote of the Corporation, to the occupation of the first story and basement of Harvard Hall. Here have been fitted up under Professor Goodale's direction a convenient laboratory of physiological botany for elementary students and another for advanced students. The botanical department has never possessed such ample accommodations and satisfactory apparatus as it now enjoys.

In 1871 a wooden Mansard roof was put upon Boylston Hall without using the precautions which would now be thought indispensable. Wooden studding, furring, and lathing were used throughout; so that this upper story of the building is much less safe against fire than the lower stories in which, with one exception, the partitions were made of brick and no furring was used. For the sum of $10,000, or thereabouts, the roof-story could be made safe by taking out all the light woodwork, and replacing it with brick walls and wire lathing; and this urgent work is only delayed until the Corporation can find the money to pay for it. As the Director points out in his interesting report (p. 141) a large amount of work was done during the summer and autumn of 1884 in making two new laboratories and a new lecture-room out of rooms previously occupied for other purposes. The number of students who elect chemistry increases from year to year, so that the various laboratories in Boylston Hall are used with great activity. The interior of the building shows many signs of the wear and tear of twenty-seven busy years.

The Jefferson Physical Laboratory, the admirable gift of Thomas Jefferson Coolidge, was finished at the close of the year 1883–84; and at the beginning of the current year all the physical collections were brought together into this building, and all the instruction in physics was concentrated there. Professors Lovering, Gibbs, and Trowbridge, Assistant Professor B. O. Peirce, and Instructors Hall and Whiting conduct their classes and carry on their investigations in this building. It is a spacious and well-arranged workshop, 200 feet long, 50 wide, and 4 stories high, with rough brick walls within as well as without, and finished throughout in the plainest possible manner; but provided with everything to facilitate physical research which intelligent forethought could plan. The building itself cost $95,000 and the necessary machinery, fittings, and furniture $20,000 more. Mr. Agassiz, as a committee of the Corporation, had charge of the construction, and gave to it a great deal of care and labor. He had the satisfaction of delivering the finished and furnished building to the physical department without having over-run the amount of Mr. Coolidge's gift — $115,000 — and the interest which had accumulated thereon during the process of building. The site of the Laboratory is one withdrawn as far as was possible from public streets, and was thus selected in order that the vibrations of the ground, caused by the passage of animals and vehicles along the streets, might not be so strong within the building as to interfere with delicate experiments. It was a wise condition of Mr. Coolidge's gift that a fund of $75,000 should be raised, the income of which should be appropriated to the running expenses of the Laboratory. By the exertions of Mr. Agassiz and Professor Trowbridge this fund was pledged by the summer of 1882, and was all paid in by the time the Laboratory was finished, Mr. Agassiz himself being by far the

largest contributor. The Laboratory is therefor
equipped but well endowed. Generosity and f
now provided ample means of instruction a
physics at this University, it remains for teache
to make these provisions serviceable for sound
the advancement of physical science.

The Director of the Observatory explains t
reducing the staff and curtailing the operation
lishment because of the reduction of its income.
ments are wasteful, because carefully trained
thereby lost to the Observatory and perhaps t
painful, because grievous hardship is inflicte
whose only resources may be a technical skill
knowledge for which there are few markets. T
enjoys the benefit of the gratuitous, or almost
vices of several gentlemen who have an enthus
nomical and physical research, and its scientific
is much increased and its reputation enhanced b
The reductions did not take effect in 1883–84, a
the Observatory as described by the Director (
found full of interest and promise.

The Museum of Comparative Zoölogy has n
in which to develop an orderly arrangement o
The alteration of the old roof was very succ
plished, and the whole building is now safe, spa
fortable. The laboratories for the teachers a
biology and geology are admirably arranged, a
facilities for the instruction of elementary and
dents and for the accommodation of specialis
could be desired. The Director now cont
changes of policy in the management of t
changes suggested by experience and by care
of the altered conditions under which the M
the future be carried on. His masterly exposi
policy of the institution (p. 159) should be
one who is interested in the growth of a produ
natural history at the University.

The gifts and bequests of the year, as r

Treasurer, were large, — namely, gifts and bequests to form new funds or increase old ones (p. 25) $258,438.90, and gifts for immediate use (p. 14) $81,346.29. In the three years past the University has received gifts and bequests to the amount of $1,096,768.13, not including the large gifts of Mr. Alexander Agassiz to the Museum of Zoölogy. The invested funds, however, have only increased by $570,518.11 in that period; the rest of the money received having gone for the most part into buildings (Medical School, Austin Hall, and Jefferson Laboratory). On the strength of these gifts the Corporation has incurred new charges; and they have made the same use of the increase in the receipts from tuition fees. This process of applying new income to the increase of instruction, collections, and apparatus, however tempting and however expedient as a rule, must now be arrested for a time in order that the scale of salaries may be somewhat raised before new salaries are undertaken. The corps is so numerous that even a very modest general increase in the scale of salaries costs a large sum. Thus, for example, to raise the salary of College professors doing full work to $4500, of assistant professors in their second term to $3000, and of tutors in their second term to $1500, and to make corresponding changes in the various salaries of instructors, would require an additional income of about $35,000 a year, supposing the number of teachers to remain stationary. Even then it would still be necessary to make distinctions between professors as to salary. This sum is the income of $700,000, or the annual tuition fees of 234 students. Judging from experience it might take from seven to ten years to gain 234 students, and such an increase of students necessarily involves additional expense. On the other hand, unless some special effort were made, it might take as many years to get a new endowment of $700,000 applicable to College salaries; for even if the present rate of $365,000 a year in gifts and bequests be maintained, a large portion of this annual increase of endowment will probably go to the professional schools, or to specific objects not salaries. The College salaries have remained stationary for fifteen years, and all that while the College has been demanding of its teachers more and more learning, labor, enthusiasm, and personal influence. The

250th anniversary of the birth of the College
celebrated. Its graduates and friends could
rate that birth in any happier or more bene
by raising a salary fund large enough to warr
general increase of salaries. A large giver cou
a special object, provision for which would
effect as a contribution to the salary fund.
endows one of the twenty-two College profes
have no endowment (for list see Appendix V
directly to the raising of all salaries; whoeve
the salary of the President, Treasurer, or Li
the inevitable cost of administration and service
or Gymnasium, sets free resources now used
charges, and contributes directly to the raising
whoever gives an unrestricted fund contribu
amount to the same end.

The course of events proves that there is to
of the first class at Cambridge. The communit
University is situated has gained experience in t
of great trusts, and possesses a sufficient numbe
able and willing to serve effectually in the man
University's property, the selection of its officer
eral oversight of its studies and discipline. Ex
that the institution will not lack land, buildings,
and that it will not lack students willing to pay
tuition-fee. Since 1864 the tuition-fee of the C
doubled, and the number of students has mu
doubled. In regard to studies, discipline, an
of teachers, the Governing Boards and the Fac
eighteen years unitedly and steadily pursued
University policy, national, unsectarian, and co
scope, and intended to assure freedom to bot
students. There is but one point at which suc
manly speaking, assured, and to this point t
the friends of the University should be directed.
clear that advanced instruction is to be suffici
The lower grades of University instruction mig
be self-supporting, but it is manifestly impos
higher grades should be. Either great endowm

ment subsidies are relied on for the support of real universities in whatever country situated. To endow professorships is also to endow research, and to provide not only for instruction upon a high plane but also for the cultivation of letters and art and for the advancement of science; recent benefactions to Harvard University have for the most part had other objects than the direct endowment of teaching, and it is particularly noticeable that the great majority of the partially endowed College professorships were thus endowed during the last century or in the earlier years of the present century.

The usual information concerning the number of students, and the honors, prizes, and degrees given in 1883–84, together with a list of the examining committees appointed for that year by the Board of Overseers, will be found in the Appendix (VII. to XI.). The attention of the Overseers is respectfully invited to the following reports from the Deans of the several Faculties, the Secretary of the Academic Council, the Librarian, the Directors of the Herbarium, Botanic Garden, Observatory, Chemical Laboratory, and Arnold Arboretum, and the Curator of the Museum of Comparative Zoölogy.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, January 14, 1885.

REPORTS OF DEPARTM

REPORTS

OF THE

DEANS OF THE FACULTIES, THE SECRETARY OF THE ACADEMIC COUNCIL, THE LIBRARIAN, THE DIRECTORS OF THE HERBARIUM, BOTANIC GARDEN, OBSERVATORY, CHEMICAL LABORATORY, AND ARBORETUM, AND THE CURATOR OF THE MUSEUM OF COMPARATIVE ZOÖLOGY.

To the President of the University:

Sir, — I have the honor to submit the following report on the administration of the College during the academic year 1883–84.

The whole number of students at the beginning of the year was nine hundred and seventy-one, distributed as follows: —

Seniors	210
Juniors	195
Sophomores	247
Freshmen	253
Whole number of undergraduates	905
Special Students	66
Total	971

One hundred and ninety-two Seniors received their degrees at Commencement. Of the remaining eighteen, two had died in the course of the year; eight had left College voluntarily, and one, for persistent neglect of duty, had been required to withdraw; one, who was on probation, and two who were under suspension, at the end of the year, were not recommended for the degree at that time; two were prevented by sickness from completing their studies, and two failed in the examinations. On the other hand, three Juniors, who had, for special reasons, obtained leave to perform the work of the course in three years, were admitted to the degree; and one member of the class of 1882, having made up the deficiencies which had prevented him from graduating with his classmates, received the degree out of course.

The following table shows the number of Seniors who have graduated at each Commencement in the last six years, with the number in each class who have failed to graduate, owing to deficiencies of scholarship: —

	1879.	1880.	1881.	1882.	1883.	1884.
Graduated	189	162	182	177	203	192
Failed	5	6	9	7	. .	2

The numbers of the other three classes of last year, with their aggregate losses and gains from October, 1883, to October, 1884, are shown in the following table: —

	October, 1883.		Loss.	Gain.	October, 1884.	
Class of 1885 . .	(Juniors)	195	22	18	(Seniors)	191
Class of 1886 . .	(Sophomores)	247	30	17	(Juniors)	234
Class of 1887 . .	(Freshmen)	253	24	27	(Sophomores)	256

The next table shows the nature of the losses and gains of the several classes: —

	Class of 1885.	Class of 1886.	Class of 1887.	Total for three Classes.
Losses.				
Left College without completing the year .	9	11	11	31
Left College after completing the year . .	4	12	4	20
Removed to a lower class	6	5	8	19
Advanced to a higher class	3	2	1	6
Total loss	22	30	24	76
Gains.				
From higher classes	. .	6	5	
From lower classes	2	1	. .	
Newly admitted	16	10	22	48
Total gain	18	17	27	62
Net loss	4	13	. .	14
Net gain	. .	. .	3	. .

Of the thirty-one students in these three classes who left College without completing the year, nineteen withdrew for various reasons of a personal nature. One, whose persistent neglect of his studies finally led to his dismission, has been permitted to return this year and join a lower class. Four withdrew at the end of the year on finding that they had failed in their studies to such an extent that they could not go on with their classes. Five were compelled by ill health to abandon their studies, and two died in the course of the year.

Of the twenty who completed the work of the year, but have not returned to College, one was drowned during the summer vacation. The rest have withdrawn for various personal reasons.

No students of very high rank are included in the list of those who have withdrawn from any of the classes either during or at the close of the year. In about half a dozen cases, however, lack of money is believed to have prevented or postponed the return of very worthy students, who were making excellent use of their opportunities here, but whose rank in their classes was not quite high enough to enable them to secure scholarships. The beneficiary funds at the disposal of the College have helped many such students through their most pressing financial difficulties; but the income of those funds is small in comparison with the demands that are made upon it, and some cases of extreme need are beyond its reach.

Of the forty-eight persons newly admitted to the three classes, ten had previously been members of the College in some higher class, but had been compelled by sickness or other cause to discontinue their studies for a time. Seven gained admission, — one to the Junior, and six to the Sophomore class, — by passing the usual examinations. Five Special Students who had performed the regular work of the Freshman year in a satisfactory manner, were admitted to the Sophomore class. The remaining twenty-six were graduates, or came from the higher classes, of other colleges. Thirteen of these were admitted to the Senior, six to the Junior, and seven to the Sophomore class. Nineteen were admitted without examination, three with partial examination, and four after pursuing courses of study here for one or two years.

The aggregate loss of the four classes due to deficiencies of scholarship is shown in the following table, which contains also the corresponding figures for preceding years. The numbers in the first line include all students who were not qualified to go on with their classes, whether they actually continued their course in lower classes, or left College at the end of the year: —

	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.
Removed to lower classes .	17	25	14	22	18	14	7	23
Withdrawn during the year	16	4	11	4	7	3	5	2
Total	33	29	25	26	25	17	12	25
Whole number of undergraduates	823	813	819	813	829	823	885	905

Examinations for admission to the Freshman class were held in

June of this year in Quincy, in addition to the places in which they have been held heretofore, — Cambridge, Andover, Exeter, New York, Philadelphia, Cincinnati, Chicago, St. Louis, and San Francisco; and in Cambridge again in September. Three hundred and seven candidates for admission were examined, of whom two hundred and fifteen had passed a preliminary examination on from five to eleven subjects. Of those who presented themselves for the first time in June, thirty-three took the whole examination at that time, and fifty-two availed themselves of the privilege of postponing a part until the fall. The following table exhibits the results of the examinations in the several subjects embraced in the requirements for admission, compared with those of previous years: —

1879. 179 candidates. 1880. 236 candidates. 1881. 253 candidates. 1882. 315 candidates. 1883. 326 candidates. 1884. 307 candidates.	PRESCRIBED SUBJECTS.										
	Caesar and Virgil.	Latin at Sight and Composition.	Xenophon or Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Plane Geometry.	Physics.	English Composition.	French or German.
Percentage failing in each study.											
1879	8	11	20	23	18	14.5	28.5	37	19	28.5	21
1880	14	6	17	17	15	14	29	36	11	17	13
1881	8	6	12	13	15	14	25	27	7	10	18
1882	7	11	7	16	11	12	27	20	14	15	15
1883	10	4	11	17	9	7	32	16	14	14	25
1884	7	4	5	8	9	13	19	17	21	12	12

	ELECTIVE SUBJECTS.									
	Cicero and Virgil.		Latin at Sight and Composition.	Herodotus.	Greek Composition.	Iliad.	Trigonometry.	Solid Geometry.	Elective Physics.	Chem. or Botany.
Percentage failing in each study.										
1879	16		28	22	33	13	32.5	60	48	24
1880	14		22	12	33	14	39	48	18	9
1881	15		13	12	19	12	30	41	16	27
	Cicero.	Virgil and Ovid.	Comp.							
1882	13	11	29	10	19	9	45	27	17	13
1883	12	6	17	8	20	7	45	12	28	13
1884	18	12	23	15	16	8	27	22	50	13

The next table presents the general results of the examinations during the four years in which the present requirements have been exclusively in use: —

	1881.	1882.	1883.	1884.
Candidates examined	253	315	326	307
" admitted	231	286	298	286
" " clear	99	116	121	142
" rejected	22	29	28	21
Per cent "	8.7	9.2	8.6	6.8

The number of candidates who presented themselves for examination in each of the four elective groups is shown in the following able: —

	1881.		1882.		1883.		1884.	
Whole number of candidates	253		315		326		307	
Number offering		Per ct.		Per ct.		Per ct.		Per ct.
Latin	239	94	294	93	303	93	293	95
Greek	203	80	246	78	254	78	247	80
Mathematics . .	46	18	56	18	50	15	59	19
Physical Science	47	18	77	24	83	25	46	15

Of these elective groups no candidate is required to offer more than two, but candidates are encouraged to offer one or both of the rest if they have had time and opportunity to do the work in a thorough manner. The following table shows, for the past four years, the number of candidates who offered each of the possible combinations of these groups: —

Number of candidates who offered	1881.	1882.	1883.	1884.
Latin, Greek, Mathematics, and Physical Science	4	6	7	4
Latin, Greek, and Mathematics	14	17	8	16
Latin, Greek, and Physical Science . . .	5	11	12	6
Latin, Mathematics, and Physical Science .	1	3	4	1
Greek, Mathematics, and Physical Science	1	. .	. .	. .
Latin and Greek	177	204	216	213
Latin and Mathematics	13	12	15	24
Latin and Physical Science	25	41	41	29
Greek and Mathematics	2	5	4	8
Greek and Physical Science	. .	3	7	. .
Mathematics and Physical Science	11	13	12	6
Total number of candidates	253	315	326	307

These tables show a remarkable steadiness in th candidates offering the classical and mathematical gr in these subjects this year at the expense of the I group is no doubt due to the change in the requirem described in my last report, which first went fully int year. The loss in numbers, it is reasonable to suppo made up by improved quality and training of the have persisted in preferring this department in spite difficulty of the examinations.

Of the two hundred and eighty-six candidates adm four by passing further examinations, and one by rec work done at another college, gained admission to class. Two hundred and twenty-seven entered the I Of the remaining fifty-four, some have signified th entering next year. The majority have not been h some of them have probably gone to other colleges, a propose to enter upon a college course at all. On twenty-one persons who had previously been admitt lege this year. Three of these passed further e gained admission, one to the Junior, and two to the S Eighteen entered the Freshman class. Besides these students from other colleges who would have been p as Sophomores chose to begin their studies here as I composition of the Freshman class is as follows: —

Admitted in 1884. . . . .
Previously admitted . . . .
Removed from a higher class . . . .

Total . . . .

There were sixty-six Special Students in attendan ning of the year. The changes in their number dow time have been as follows: —

In attendance October, 1883 . . . .
Registered later in the year . . . .

Withdrew before the Final Examinations . . . .

Took Final Examinations in one or more studies
Left College at the end of the year . . . .
Admitted to a College class . . . .
Admitted to candidacy for a higher degree . . .

Returned as Special Students, September, 1884 .
Admitted September and October, 1884 . . . .

Present number . . . .
Net gain, 4.

Combining and comparing the statistics which have been given, we obtain the following results: —

Number of students now in attendance:	
Seniors	191
Juniors	234
Sophomores	256
Freshmen	255
Whole number of undergraduates	936
Special Students	70
Total	1006
Whole number of undergraduates, October, 1883	905
“ “ “ “ 1884	936
Increase	31
Whole number of students, October, 1883	971
“ “ “ “ 1884	1006
Increase	35

Three hundred and eight candidates presented themselves for a preliminary examination this year, an increase of twenty-four over those of last year. An unusually large number, however, proved to be insufficiently prepared, and only two hundred and forty-six, — two more than last year, — received certificates, having passed in at least five subjects. The following table shows, for the last four years, the proportion of candidates examined in each subject, and the proportion of failures in each: —

Preliminary Examination. 1881, 266 candidates. 1882, 287 “ 1883, 284 “ 1884, 308 “	Caesar and Virgil.	Latin at Sight.	Xenophon or Greek Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Geometry.	Physics.	English.	French.	German.
Percentage of the whole number of candidates who were examined in each study.												
1881	88	86	78	79	76	97	82	46	74	61	54	5
1882	93	93	77	83	83	97	88	41	75	64	51	5
1883	93	92	76	81	84	98	91	49	81	66	51	9
1884	93	93	82	82	77	98	89	38	65	63	53	7
Percentage of failure among those examined in each study.												
1881	15	19	28	24	22	21	35	41	17	19	17	14
1882	20	26	9	30	27	17	37	27	12	37	17	14
1883	6	14	15	24	15	15	53	19	13	28	28	8
1884	15	6	10	18	19	29	44	37	47	40	25	9

The next table exhibits the general results of the preliminary examinations for the same period:—

	1881.	1882.	1883.	1884.
Number of candidates who passed in				
Five subjects	38	40	27	39
Six "	30	28	30	38
Seven "	46	46	60	57
Eight "	65	58	66	72
Nine "	17	33	29	23
Ten "	19	24	24	15
Eleven "	5	4	8	2
Received certificates	220	233	244	246
Failed to pass in five subjects	46	54	40	62
Total number of candidates . .	266	287	284	308

In administering the discipline of the College, the Faculty was called upon oftener than it has been in any recent year to resort to severe measures. Yet the number of cases was not large. Five students were suspended for longer or shorter periods, one for disorderly conduct on the street, one for having a drinking party in his room, one for making a false statement to a College officer, one for taking into an examination room notes on the subject of the examination, and one for presenting a thesis which he had copied from a book. Suspension is a penalty which still appears to be necessary for certain kinds of cases, but it is one to which the Faculty resort with increasing reluctance. Since the greater part of the College course was made elective, it has become almost impossible for a student, especially a Senior or a Junior, to obtain outside of Cambridge the instruction necessary to enable him to keep up in his studies, and prepare himself for the examinations, which he must pass at the regular times. Suspension, moreover, is a part of an order of things which has in large measure passed away, and it has become more and more out of place as the new spirit which has been infused into the College discipline in the last ten years has worked out more thoroughly and completely its legitimate results. In fact, the changes which have been wrought in that period have for their logical consequence the abolition of all penalties as such. The student has been relieved from the observance of numerous minute regulations, guarded by artificial penalties, because it is assumed that his conscience and judgment and self-respect are sufficiently developed to be fitly charged with the control of his behavior: he ought not to escape the responsibility which belongs to freedom of action. He is subject to a few technical requirements, — those which are regarded as necessary for the maintenance of our system, — and to the common law of gentlemanly conduct. Both are essential to the orderly life of our academic community, and to its success in accomplishing its work; and the observance of both may properly be demanded as an essential condition of membership in the community.

Whether the time has come for the practical application of this conclusion is another question. As a step towards it, the Faculty, in the early part of last year, revised the rule relating to Probation, the significance of which has been a little vague since the old system of numerical penalties was abolished. Under the new rule a student on probation can be restored to full standing only by a special vote of the Faculty. While on probation he is excluded from competition for any honors or prizes offered by the College, and will not be recommended for a degree; and if, after a reasonable period of trial, his conduct is still unsatisfactory, his probation may be closed, and his connection with the College shall then cease. In short, Probation brings a student face to face with the alternative of leaving College, if he will not prove his right to stay by diligence and good behavior. It is rather a substitute for Suspension than preliminary to it, and contemplates the complete and not the temporary separation from College of the student whom it fails to reclaim. It's chief application will be to students who persistently neglect their work, and whose college career should be cut short the moment it becomes clear that they will not abandon their idle ways and devote themselves with reasonable diligence to fulfilling the objects of their residence here. One Senior and one Sophomore under this rule were required to leave College during the year, and a Senior who was put on probation near the end of the year for continuing to violate one of the regulations after an admonition from the Faculty, failed to obtain his degree with his class. In a much larger number of cases, on the other hand, the application of the rule has proved a very effective stimulus to regularity and faithful work.

Another amendment to the regulations, adopted last year, was designed to secure a more careful observance of the rule requiring continuous residence in term time, and to provide more prompt and definite notice of the absences of students from College, for whatever reason, than can be obtained through the weekly returns of attendance at College exercises. The amended rule requires a student, whose residence is for any reason interrupted, to give immediate notice of the fact to the Dean; and if his absence is prolonged beyond three days, he is further required to report in person at the Dean's office immediately on his return.

The order of the College was, with a few exce
throughout the year. The only serious interruption
which have occurred of late years are the celebratio
match games and athletic contests by noisy fireworks
and bonfires surrounded by shouting crowds of stud
lege Yard. In dealing with these excesses last y
relied rather on the good sense and good disposit
majority of the students than on the punishme
offenders. After a second and somewhat dangerou
of the kind referred to, they issued an address to th
view to defining the limits of what was permissible o
All horn-blowing, all bonfires, and noisy and dan
were prohibited; but cheering, music, and illuminat
gas, or Bengal lights in the Yard, and fireworks on
Field were not objected to, provided that all dem
cease by eleven o'clock. The students were as
whether the safety of the College buildings, the righ
of Cambridge, and the desirable privacy of the Yard
regarded on the nights when the objectionable de
occurred; and the co-operation of all was invited
restrictions indicated. The response to this appeal
be desired. The students at once recognized the
the Faculty's position, and for the rest of the year
within the prescribed limits.

The good feeling which had existed between the
students had been much strained earlier in the yea
of the adoption by the Faculty of certain rules rel
contests. The rules had been prepared at an inter
ence, and were to go into effect only in case they sh
by at least five colleges. Their aim was to improve
athletic sports by giving the instructor in physical t
nized position in each college, by strictly excluding
restricting contests to college organizations and colle
by placing all rules for contests and the contests t
the supervision of a committee representing the
The objects sought were excellent, but the rules we
ticulars not well considered, and involved some t
which the Faculty had not contemplated in voting fo
representations on these points were made by the s
Faculty asked the conference to consider the matter f
had become evident by this time that the rules woul
by the requisite number of colleges, they were dropp
is unfortunate, in as much as it leaves our students

own rules debarred from practice with professionals, at a disadvantage in their contests with the students of other colleges who are not so restricted. It is to be hoped that another effort may be made to bring about some agreement among the colleges, which will not fail from attempting too much.

The instruction given in the College in the year 1883–84 is set forth in detail in the tables on the following pages, which contain a statement of the work done in each course, the names of the instructors, the number of hours a week of instruction, and the numbers of students of various classes and departments,* as well as the total number of students, in regular attendance.

In addition to these courses, instruction in certain subjects was given to voluntary classes. Professor Allen lectured once a week during the first half-year on the History and Methods of Classical Study. The lectures were open to any one taking a course in Greek or Latin, and were regularly attended by about twenty students. Professor Lovering gave the usual course in Physics, lecturing once a week from December 1 to June 1, on Electricity, Magnetism, Electro-Magnetism, and Magneto-Electricity. From twenty-five to seventy-five students attended this course. In Elocution, in addition to the elective course (English 9), Mr. Jones gave instruction to twenty-eight Freshmen and thirty-nine students from the three upper classes. The latter were taught in two sections, each once a week throughout the year; the Freshmen in two sections, once a week during the first half-year. Evening Readings were given as in previous years, embracing the following selections: The Frogs of Aristophanes (three evenings), by Professor Goodwin; the Meno of Plato (two evenings), by Professor Allen; the Heauton Timorumenos of Terence (two evenings), by Mr. Preble; the Trinummus of Plautus (two evenings), by Professor Greenough; Books II., IV., VI. of the Aeneid of Virgil (three evenings), by Mr. Parker; and selections from German literature (five evenings), by Mr. Lutz. It may be proper here to refer also to the rich opportunities offered to College students in the numerous public lectures given by distinguished specialists under the auspices of the University.

The work done by the Special Students in attendance last year was of about the same average quality as that of the year before.

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* To designate the various kinds of students in the several courses, the following abbreviations are used: Se. for Senior, Ju. for Junior, So. for Sophomore, Fr. for Freshman, Sp., for Special Student, Sc. for Scientific Student, Gr. for Graduate Student, Di. for Divinity Student, Law for Law Student, Me. for Medical Student, Ve. for Student in Veterinary Medicine, and Bu. for Student of the Bussey Institution.

PRESCRIBED STUDIES.

Instructors.	Courses of Instruction.	Hours per week.	Students.	Total number of Students.
	FRESHMAN STUDIES.			
	GREEK.			
Mr. Parker	1. *Minimum Course.* — Herodotus (Selections). — Homer (Iliad, Books I., III., VI.). — Translation at sight and Composition. — Smith's Student's History of Greece, Books I.–III. — Essays	3	52 Fr., 6 Sp.	58
Profs. Croswell and Dyer	2. *Maximum Course.* — Lysias (five orations). — Plato (Apology). — Homer (Odyssey, Books I., V., VI., VII., IX., X., XII.). — Translation at sight	3	87 Fr., 2 Sp.	89
Profs. J. W. White, Croswell, and Dyer	3. *Advanced Course.* — Lysias (five orations). — Plato (Apology). — Homer (Odyssey, Books VI.–X., XII.). — Aristophanes (Clouds). — Sidgwick's Prose Composition (Part I.). — Translation at sight	3	108 Fr., 2 Sp.	110
	LATIN.			
Mr. Preble	1. *Minimum Course.* — Cicero (De Senectute; eight orations). — Ovid (Ramsay's Selections). — Composition and Translation at sight	3	1 Ju., 14 Fr., 6 Sp.	21
Messrs. Preble and Parker	2. *Maximum Course.* — Livy (Books VIII., IX.). — Cicero (De Re Publica, Book I., and Scipio's Dream). — Horace (Odes). — Translation at sight	3	2 So., 115 Fr., 10 Sp.	127
Profs. Greenough and Allen and Messrs. Preble and Parker	3. *Advanced Course.* — Livy (Books VIII., IX.). — Cicero (De Re Publica, Book I. and Scipio's Dream). — Horace (Odes). — Caesar (Civil War, Book III.). — Translation at sight. — Composition, with colloquial exercises	3	1 So., 107 Fr., 2 Sp.	110

	GREEK AND LATIN.			
Prof. Dyer	Twenty Lectures on Classical Literature. — Jebb's Primer of Greek Literature. — Cruttwell's Roman Literature	1	235 Fr., 17 Sp.	252
	GERMAN.			
Profs. Cook and Bartlett and Mr. Lutz	Cook's Otto's or Sheldon's Grammar. — Joynes's Otto's Reader. — Translation of German Stories. — Practice in writing German	3	1 Se., 6 Ju., 12 So., 208 Fr., 16 Sp., 5 Sc., 1 Gr.	249
	FRENCH.			
Mr. Scribner	Brachet's Grammaire française. — Bôcher's Reader. — French Prose	3	2 Se., 1 Ju., 34 Fr., 12 Sp., 3 Sc., 1 Mc.	53
	MATHEMATICS.			
Dr. B. O. Peirce and Mr. Lane	1. *Minimum Course.* — Solid Geometry. — Plane Trigonometry and Logarithms. — Analytic Geometry	2 till Xmas, then 3	4 Se., 1 Ju., 7 So., 213 Fr., 11 Sp.	236
Prof. Byerly	2. *Maximum Course.* — Analytic Geometry (Lectures and Exercises)	2 till Xmas, then 3	2 Se., 1 Ju., 27 Fr., 4 Sp., 2 Sc.	36
Prof. C. J. White	3. Advanced Algebra	1 till May 1	1 So., 245 Fr., 16 Sp., 1 Law	263
	PHYSICS.			
Dr. Hall	*Minimum Course.* — Deschanel's Natural Philosophy (Parts of Vols. I., II., IV.)	2	1 Ju., 9 So., 177 Fr., 9 Sp., 2 Sc.	198
Dr. Hall	*Maximum Course.* — Deschanel's Natural Philosophy (Parts of Vols. I., II., IV.). — Maxwell's Theory of Heat (Selections)	2	1 Se., 56 Fr., 7 Sp., 1 Sc.	65
	CHEMISTRY.			
Prof. Cooke	Nineteen Lectures	1	236 Fr., 22 Sp., 1 Law	259

PRESCRIBED STUDIES. — CONTINUED.

	SOPHOMORE STUDIES.			
Prof. A. S. Hill and Mr. Briggs	1. Hill's Principles of Rhetoric. — Burke's Speech on Conciliation with America. — Lectures on English and American authors. — Lectures on Composition, narrative and argumentative	2	2 Ju., 216 So., 2 Fr., 7 Sp., 1 Sc., 1 Law	229
Messrs. Briggs, Clymer, and Wendell	2. Six Themes, corrected and rewritten by		3 Se., 3 Ju., 236 So., 3 Fr., 6 Sp., 1 Sc., 1 Law	253
	JUNIOR STUDIES.			
Mr. Wendell	1. (*a*) Six Themes, corrected and rewritten by		6 Se., 184 Ju., 3 So., 5 Sp., 1 Sc., 1 Gr.	200
Mr. Wendell	(*b*) Ten Themes, with a number of informal exercises, written by a voluntary class of		30 Ju., 1 Sp., 1 Gr.	32
Dr. Snow	2. (*a*) Four Forensics		8 Se., 173 Ju., 4 Sp.	185
	(*b*) Theses substituted for one or more Forensics by		14 Ju.	14
	SENIOR STUDIES.			
Dr. Snow	(*a*) Four Forensics		171 Se., 2 Ju.	173
	(*b*) Theses or Commencement Parts substituted for one or more Forensics by		29 Se.	29

ELECTIVE STUDIES.

Instructors.	Courses of Instruction.	Hours per week.	Students.	Total number of Students.
	SEMITIC LANGUAGES.			
Prof. Lyon	1. Hebrew. — Davidson's Grammar, with Written Exercises. — The Hebrew Bible (selections from the Book of Genesis, thirteen chapters in the Book of Judges, and fifteen Psalms). — Practice in reading Hebrew prose at sight	3	1 Se., 1 Sp., 3 Di.	5
Prof. Toy	2. Hebrew (Advanced Course). — The Hebrew Bible (parts of Chronicles and Jeremiah, the whole of the second book of Psalms, Song of Songs, Ecclesiastes, Esther). — Lectures on Syntax and on Textual Criticism, with practice in the Septuagint	2	2 Se.	2
Prof. Lyon	3. Aramaic. — Grammars of Nöldeke, Uhlemann, and Riggs. — Rödiger's Chrestomathia. — Selections from the Peshitto and the Targums. — The Aramaic portions of Daniel and Ezra	2	2 Se.	2
Prof. Lyon	4. Assyrian. — Delitzsch's Assyrische Lesestücke (the Syllabaries, the Historical Selections, the Creation and Deluge Fragments, and Istar's Descent to Hades). — The Cuneiform Inscriptions of Western Asia (the Assurbanipal Inscription in Vol. V.)	2	1 Se.	1
Prof. Lyon	5. Assyrian (Advanced Course)	2	Omitted in 1883–84.	
Prof. Lyon	6. Lectures on the Cuneiform Inscriptions and the Old Testament. — The Discoveries in Babylonian-Assyrian History and Literature applied to the Elucidation and Illustration of the Old Testament	1	1 Se., 1 Di.	2
Prof. Toy	7. Arabic. — Wright's Grammar and Reader. — The Thousand and One Nights (selections)	2	1 Ju.	1

ELECTIVE STUDIES. — CONTINUED.

Prof. Toy	8. Arabic (Advanced Course). — Syntax (Wright's Grammar). — Selections from the Kuran and the Muallakat; with other poems and metrical prose pieces	2	1 Se.	1
Profs. Toy and Lyon	The Semitic Seminary met twice a month in the evening, each session lasting about two hours. Papers were presented by various members, and discussed by instructors and students; and a part of the Book of Job was read critically in the Hebrew, with comparison of Greek, Aramaic, Latin, and Arabic versions		3 Se., 1 Gr., 3 Di.	7
	INDO-IRANIAN LANGUAGES.			
Prof. Lanman	1. Sanskrit. — Whitney's Grammar. — Lanman's Reader. — Lanman's Compendium of Sanskrit Paradigms. — Reading of Nala, Hitopadeça, and Kathā-sarit-sāgara	3	2 Se., 6 Gr.	8
Prof. Lanman	2. Sanskrit (Advanced Course). — Hymns of the Rigveda. — Selections from the Brahmanas and the Laws of Manu	2	1 Se., 1 Gr.	2
Prof. Lanman	3. Sanskrit. — Reading at sight from the Maha-bharata	1 (2d half-year)	1 Se.	1
Prof. Lanman	4. Old Iranian		Omitted in 1883–84.	
	GREEK.			
Prof. Croswell	1. Demosthenes (Philippics). — Aristophanes (Acharnians). — Aeschylus (Prometheus). — Plutarch (Themistocles). — Theocritus (Idylls)	3	1 Se., 4 Ju., 12 So., 1 Fr.	18
Profs. J. W. White and Dyer	2. Thucydides (Selections from Books VI. and VII. — Sophocles (Ajax). — Aristophanes (Birds). — Euripides (Bacchae)	3	1 Jr., 38 So., 1 Fr., 1 Gr.	41
Prof. J. W. White	3. Odyssey (Books XIII.-XXIV.). — Iliad (Books X.-XIII.)	3	20 Se., 20 Ju., 24 So., 1 Fr., 1 Sp., 2 Gr.	68
Profs. Croswell and Dyer	4. Greek Composition (First Course). — Sidgwick's Greek Prose Composition, Parts II. and III.	1	25 So., 1 Fr., 1 Gr.	27

Prof. Dyer	5. Greek Composition (Second Course). — Sidgwick's Greek Prose Composition, Part IV. — Sargent and Dallin's Materials and Models (Oratorical)	1	4 Ju., 2 Gr.	6
Prof. J. W. White	6. Greek Composition (Third Course). — English Exercises, prepared by the Instructor, to be translated into Platonic Greek	1½	8 Se., 1 Ju., 2 Gr.	11
Prof. J. W. White	7. Aeschines (Contra Ctesiphontem). — Demosthenes (De Corona). — Thucydides (parts of Books I. and II.). — Lectures on the Political History and Antiquities of Athens	3	3 Se., 8 Ju., 1 So.	12
Prof. Goodwin	8. Plato (Republic). — Aristotle (Ethics, I.-IV. and X.). — Lectures on the early History of Greek Philosophy	3	11 Se., 3 Ju., 2 Gr.	16
Prof. Goodwin	9. Aeschylus (Agamemnon and Eumenides). — Sophocles (Oedipus at Colonus). — Aristophanes (Knights). — Pindar (Selections). — Lectures on the History of the Attic Drama	3	5 Se., 7 Ju., 5 Gr.	17
Prof. J. W. White	10. The Life of the Ancient Athenians described and illustrated from the Monuments	3	Omitted in 1883–84.	
Prof. Allen	11. Introduction to the Critical Study of Homer. — Lectures on the History of Homeric Studies and of the Homeric Text, Versification, and Language. — Discussion of Iliad, Book I. (36 vss.) and of a part of Book IX., partly by the Instructor and partly by the students	2	5 Gr.	5
Prof. Goodwin	12. Lectures on the Political and Legal Antiquities of Athens	1	1 Se., 4 Gr.	5
Prof. Goodwin	13. Aristotle (Politics). — Plato (Theaetetus). — History of Greek Philosophy	2	3 Se.	3
	LATIN.			
Prof. Smith	1. Terence (Phormio, Andria, and two acts of the Heauton Timorumenos.) — Cicero (Selected Letters). — Tacitus (Agricola and part of the Germania). — Horace (Satires and Epistles). — Translation at sight	3	53 So., 1 Fr.	54
Mr. Preble	2. Caesar (Civil War, Books I.-III.). — Livy (Books I.-III.). — Cicero (Tusculan Disputations). — Catullus (Marriage of Peleus). — Theses	3	8 Se., 14 Ju., 35 So., 1 Fr., 3 Sp.	61

ELECTIVE STUDIES. — CONTINUED.

Mr. Parker	3. Latin Composition (First Course). — Lectures and Exercises	1	1 Ju., 28 So., 1 Fr.	30
Prof. Smith	4. Latin Poetical Literature. — Lectures on the Latin Poets, with readings from Thackeray's Anthology	3	3 Se., 1 Ju., 2 So.	6
Prof. Greenough	5. Latin Prose Literature and Drama. — Plautus (six plays). — Tacitus (Annals, Books I.–VI., XI.–XIII., and part of XIV.). — Seneca (Ludus de Morte Claudi)	3	3 Se., 3 Ju., 1 Sp.	7
Prof. Lane	6. Juvenal (Satires I., III.–VIII., X., XI., XIII., XIV.). — Suetonius (Claudius, Nero, Galba). — Tacitus (Annals, Selections from Books XI.–XIV.)	3	2 Se., 8 Ju.	10
Prof. Allen	7. Latin Composition (Second Course). — Weekly translations into Latin from Xenophon's Anabasis and from various English authors, corrected and commented on. Occasional written exercises in free narration (not translations) on given topics. Frequent extemporaneous reading and exposition of Latin authors, and constant conversational exercises. (The course was conducted wholly in Latin)	1	3 Se., 7 Ju.	10
Prof. Lane	8. Plautus (Bacchides, Pseudulus, Stichus, and first act of Curculio). — Lucretius (Selections from Books I.–V.)	3	9 Se., 2 Ju., 1 Gr.	12
Mr. Preble	9. Latin Composition (Third Course). — Potts' Hints towards Latin Prose Composition. — Translation of exercises from various sources	1	3 Se., 1 Ju.	4
Prof. Greenough	10. Topics in Roman Private Life, chosen by the students themselves and investigated by them under direction of the Instructor, who also lectured on selected topics	2	2 Se., 4 Gr.	6
Prof. Allen	11. Critical Study of Ovid (Metamorphoses and Ex Ponto)	2	Omitted in 1883–84.	
Prof. Lane	12. Latin Grammar. — Allen's Remnants of Early Latin. — Quintilian (Book I.). — Gellius (chapters on Grammar)	1	1 Se., 2 Gr.	3

	GREEK AND LATIN.			
Prof. Greenough	1. Greek and Latin Comparative Philology. — Lectures, following Schleicher's Compendium, Curtius's Grundzüge, Halsey's Greek and Latin Etymology, and Papillon's Inflections	3	1 Se., 2 Ju., 2 Gr.	5
Profs. Allen and Smith	2. Practice in Text-Criticism and Interpretation. — Critical Study of a part of the Seven against Thebes of Aeschylus and a part of the Adelphi of Terence. — Discussion of Theses, prepared by students, on philological questions. (The course was conducted wholly in Latin.)	3	7 Gr.	7
	ENGLISH.			
Prof. Child	1. English Literature. — Chaucer (Selected Canterbury Tales). — Bacon (Essays). — Milton (Minor English Poems)	3	6 Se., 4 Ju., 11 So., 1 Fr., 3 Sp., 1 Gr.	26
Prof. Child	2. English Literature. — Shakspere (six plays)	3	13 Se., 24 Ju., 22 So., 1 Fr., 6 Sp., 1 Gr., 1 Law	68
Prof. Child	3. English. — Sweet's Anglo-Saxon Reader. — Beówulf	3	Omitted in 1883–84.	
Prof. Child	4. Early English. — Mätzner's Altenglische Sprachproben (Poesie, with the more important parts of the Prosa). — The Romance of Sir Tristram	3	1 Jr., 1 Gr.	2
Prof. A. S. Hill	5. Rhetoric and Themes (Advanced Course)	3	9 Se., 11 Ju., 1 Sp., 1 Gr.	22
	6. Oral Discussion		Omitted in 1883–84.	
Prof. A. S. Hill	7. English Literature of the Eighteenth Century	1	Omitted in 1883–84.	
Prof. A. S. Hill	8. English Literature of the Nineteenth Century	1	1 Se., 6 Ju., 16 So., 4 Sp., 1 Gr.	28
Mr. Jones	9. Elocution. — Russell's Vocal Culture. — Guttmann's Gymnastics of the Voice and Bacon's Manual of Gesture, with Lectures. — Shakspere (Macbeth and Julius Caesar). — Selections from Milton, Webster, Burke, Scott, Irving, and others	2	15 Se., 17 Ju., 15 So., 1 Fr.	48

ELECTIVE STUDIES. — CONTINUED.

	GERMAN.			
Prof. Cook	1. Writers of the Nineteenth Century. — Kotzebue (Deutsche Kleinstädter). — Chamisso (Peter Schlemihl). — Elz (Er ist nicht eifersüchtig). — Freytag (Aus dem Jahrhundert des grossen Krieges, 118 pages)	3	2 Se., 3 Ju., 37 So., 1 Sp., 1 Sc.	44
Prof. Bartlett	2. Subjects in German History and Literature. — Stacke's Deutsche Geschichte, Parts V., VI. — Der neue Plutarch, Vol. 2. — Practice in writing German. — Reading at sight	3	2 Ju., 69 So., 1 Fr., 3 Sp.	75
Mr. Lutz	3. German Literature of the Eighteenth Century (First Course). — Lessing (Emilia Galotti, Minna von Barnhelm, Nathan der Weise, Sara Sampson). — Wieland (Selections from Oberon and other poems). — Goethe (Egmont, Iphigenie, Faust). — Schiller (Wilhelm Tell). — Echtermeyer's Auswahl Deutscher Gedichte (poems of Klopstock, Voss, Goethe, Schiller, Uhland). — König's Litteraturgeschichte. — Written and oral translations. — Lectures. (The course was conducted wholly in German.)	3	6 Se., 22 Ju., 10 So., 1 Fr.	39
Prof. Cook	4. Schiller (Kabale und Liebe, Wallenstein's Tod). — Goethe (Clavigo, Hermann und Dorothea). — Wieland (Oberon, six books)	3	4 Se., 17 Ju., 4 So., 2 Fr.	27
Prof. Bartlett	5. German Literature of the Eighteenth Century (Second Course)	3	Omitted in 1883–84.	
Prof. Cook	6. Lindau (Essays, 296 pages). — Grillparzer (Des Meeres und der Liebe Wellen). — Franzos (Die Juden von Barnow). — Jeffcott and Tossell's Newspaper Reading Book, 157 pages	3	9 Se., 2 Ju.	11
Mr. Sheldon	7. German Literature before Luther. — Hartmann von Aue (Der arme Heinrich). — Nibelungenlied. — Walther von der Vogelweide (Selections). — Additional reading, not less than about six thousand lines, done by students alone and reported on in form of Theses	3	1 Se., 1 Ju., 1 Gr., 1 Law	4
Mr. Sheldon	8. Introduction to Germanic Philology	2	Omitted in 1883–84.	

	FRENCH.			
Mr. Scribner	1. French Novels and Plays. — Exercises in Conversation and Composition	3	6 Se., 5 Ju., 55 So., 4 Fr., 3 Sp.	73
Prof. Bôcher	2. La Fontaine (Fables). — Taine (La Fontaine et ses fables). — Racine (five plays). — La Bruyère (Les Caractères). — Victor Hugo (Hernani). — Guérard's Grammaire et Compléments	3	1 Se., 5 Ju., 17 So., 1 Sp.	24
Prof. Bôcher	3. Molière (twenty-three plays). — Corneille (six plays). — Reynard (five plays). — Boileau (L'Art poétique). — Geruzez's Histoire de la Littérature française	3	1 Se., 9 Ju., 2 So., 1 Fr., 1 Sp., 1 Gr.	15
Mr. Scribner	4. Littérature française au XVIIème siècle. — Themes. — Lectures	3	4 Se., 3 Ju., 5 So., 2 Fr., 1 Gr.	15
Prof. Bôcher	5. Montaigne (Essais). — Darmesteter, Morceaux choisis du XVIe siècle. — Charles d'Orléans, Villon, Commines, etc. (Extracts). — Littérature française au XVème et au XVIème siècles	1	2 Se., 1 Ju.	3
Prof. Bôcher	6. Littérature française jusqu'au XVème siècle	1	Omitted in 1883–84.	
Mr. Sheldon	7. French and Provençal Philology. — Parts of Diez's Grammaire des langues romanes, and of Bartsch's Chrestomathie de l'ancien français	1	1 Gr.	1
Prof. Bôcher	8. Translation and Reading at sight. — Alfred de Vigny (Cinq-Mars). — George Sand (La petite Fadette). — About (Le Roman d'un brave homme). — Cherbuliez (L'Idée de Jean Têterol)	2	10 Se., 19 Ju., 23 So., 2 Sp., 2 Gr., 1 Law, 1 Sc.	58
	ITALIAN.			
Mr. Sheldon	1. Toscani's Grammar. — De Amicis (part of the Racconti Militari). — Manzoni (most of I Promessi Sposi). — G. Giacosa (one play). — Translation of easy English into Italian	3	3 Se., 7 Ju., 3 So., 1 Sp.	14
Mr. Sheldon	2. Gherardi del Testa (six plays). — Ariosto (Orlando Furioso). — Tasso (Gerusalemme Liberata). — G. Giacosa (one play). — Translation from English into Italian	3	4 Se., 4 Ju., 1 So.	9

ELECTIVE STUDIES. — CONTINUED.

Prof. Nash	3. Selections from Boccaccio, Petrarca, Dante. — History of Italian Literature. — Composition	3	Omitted in 1883–84.	
Prof. Norton	4. Dante	2	Omitted in 1883–84.	
	SPANISH.			
Mr. Coolidge	1. Knapp's Grammar. — Nociones de Historia de Grecia. — Gil Blas. — El Eco de Madrid. — Translation into Spanish	3	15 Se., 19 Ju., 4 So., 2 Sp., 2 Sc.	42
Mr. Coolidge	2. Moratin (El Sí de las Niñas; El Viejo y la Niña). — Hartzenbusch (La Archiduquesita, Juan de las Viñas). — Juan Valera (Pepita Jimenez). — Syntax and Prose Composition	3	1 Se., 5 Ju., 1 Law	7
Prof. Nash	3. Selections from Calderon, Lope de Vega, and Cervantes. — Early Spanish. — History of Spanish Literature. — Composition	3	Omitted in 1883–84.	
	PHILOSOPHY.			
Dr. Royce	1. Psychology and Logic. — Introduction to the study of Philosophy (Lectures). — Deductive Logic (Lectures). — Fowler's Inductive Logic. — Lectures on special philosophical and psychological topics	3	4 Se., 34 Ju., 29 So., 8 Sp., 1 Sc.	76
Prof. James	2. Psychology. — Taine on Intelligence. — Lectures	3 1st half-year	29 Se., 23 Ju., 26 So., 2 Sp., 1 Sc.	81
Prof. James	3. The Philosophy of Evolution. — Spencer's First Principles and Data of Ethics. — Lectures	3 2d half-year	31 Se., 21 Ju., 33 So., 3 Sp., 1 Sc.	89
Dr. Royce	4. Introduction to the History of Ethics. — Mill's Utilitarianism. — Spencer's Data of Ethics. — Fichte's Vocation of Man. — Lectures and Theses	3	20 Se., 18 Ju., 1 So., 2 Gr.	41
Prof. James	5. English Philosophy. — Locke's Essay on the Human Understanding. — Berkeley's Principles of Human Knowledge and Theory of Vision. — Hume's Inquiry concerning Human Understanding. — Theses	3	4 Se., 3 Ju., 1 Sp., 1 Gr.	9

Prof. Bowen	6. Earlier German and French Philosophy. — Meiklejohn's translation of Kant's Critique of Pure Reason. — Bouillier's Histoire de la Philosophie Cartésienne. — Bowen's Modern Philosophy	3	16 Se., 4 Ju., 1 Di.	21
Prof. Bowen	7. German Philosophy of the Present Day. — Schopenhauer's Die Welt als Vorstellung und Wille. — Hartmann's Philosophie des Unbewussten	3	3 Se., 1 Di.	4
Dr. Royce	8. Metaphysics (Advanced Course). — Bowne's Metaphysics. — Lotze's Metaphysik (two books). — Lectures and Theses	3	2 Se.	2
Prof. James	9. Psychology (Advanced Course). — Lectures. — Preparation and discussion of Theses	2	4 Se., 1 Gr., 1 Di.	6
Prof. Peabody	10. The Philosophy of Religion. — Lectures on the History of research concerning the Nature of Religion, with an examination of the evidence of the Ethnic Religions and the religious aspect of duty, immortality, and worship, and an exposition of the theory of the religious sentiment toward which this evidence seems to point	1	4 Se., 1 So., 12 Di.	17
Prof. Peadody	11. Ethical Theories and Social Problems. — Lecky's History of European Morals. — Spencer's Data of Ethics. — Essays on practical methods of reform, with discussion of the ethical principles involved. — Topics treated: Charity, Divorce, Labor, Indians, Prisons, Temperance, and War	1	4 Se., 3 Ju., 1 So., 5 Di.	13
	Political Economy.			
Prof. Laughlin	1. Mill's Principles of Political Economy. — Lectures on Banking and the Financial Legislation of the United States	3	26 Se., 99 Ju., 62 So., 18 Sp., 1 Gr., 3 Law	209
Prof. Dunbar	2. History of Economic Theory and an Examination of Recent Doctrines. — Cairnes's Leading Principles. — George's Progress and Poverty. — Carey's Social Science. — Lectures	3 in 1st half-year, 2 in 2d	18 Se., 2 Ju., 1 Sp., 2 Gr.	23
Prof. Laughlin	3. Discussion of Practical Economic Questions. — Theses and Lectures on the general question of Bimetallism, on its history, and on the production of gold and silver. — Lectures on the Navigation Laws and	3	6 Se., 1 Gr.	7

ELECTIVE STUDIES.—CONTINUED.

	American shipping, and on the relative advantages of government issues and national bank notes			
Prof. Dunbar	4. Economic History of Europe and America since the Seven Years' War.—Lectures	3	17 Se., 19 Ju., 2 Sp., 2 Sc.	40
Prof. Laughlin	5. Economic Effects of Land Tenures in England, Ireland, France, and Germany.—Lectures and Theses	1 or 2	3 Se., 1 Ju., 1 Gr.	5
Dr. Taussig	6. Lectures on the History of Tariff Legislation, chiefly in the United States, with a discussion of the principles of tariff legislation	1	13 Se., 1 Ju., 3 Gr.	17
Prof. Dunbar	7. Comparison of the Financial Systems of France, England, Germany, and the United States.—Lectures	1	19 Se., 2 Ju., 2 Gr.	23
	HISTORY.			
Prof. Macvane	1. Mediaeval and Modern History (Introductory to Courses 7, 8, 9, 10, and 11)	2	3 Se., 16 Ju., 72 So., 2 Fr., 4 Sp., 1 Gr.	98
Prof. Macvane	2. Constitutional Government in England and the United States (Introductory to Courses 12, 13, and 14)	3 1st half-year	8 Se., 37 Ju., 58 So., 1 Fr., 10 Sp., 1 Sc.	115
Prof. Gurney	3. Roman History to the Fall of the Republic, with especial reference to the Development of Political Institutions in Greece and Rome	2	Omitted in 1883–84.	
Prof. Gurney	4. Later Roman and Early Mediaeval History (from Augustus to Charlemagne), with especial reference to Institutions	2 or 3	5 Se., 2 Ju., 2 So., 1 Fr., 3 Sp., 1 Gr.	14
Prof. Emerton	5. The Conflict of Christianity with Paganism, to the end of the Eighth Century.—Lectures	2	7 Se., 2 So., 8 Di.	17
Prof. Young	6. The Legal Institutions of the Franks and the Anglo-Saxons	2	Omitted in 1883–84.	
Prof. Young	7. The General History of Europe from the beginning of the Ninth to the end of the Thirteenth Century	3	Omitted in 1883–84.	
Prof. Gurney	8. Constitutional and Legal History of France to the end of the Fifteenth Century	2 or 3	4 Se., 3 Ju.	7

Prof. Young	9. Constitutional and Legal History of England to the Sixteenth Century. — Stubb's Constitutional History (Selected Charters)	3	15 Se., 20 Ju., 2 Gr., 1 Law	38
Prof. Emerton	10. History of the Protestant Reformation and the Roman Catholic Reaction. — Lectures and Theses	2	14 Se., 1 Ju., 3 Sp., 5 Di.	23
Prof. Macvane	11. European History during the Seventeenth Century and the first half of the Eighteenth	3	Omitted in 1883–84.	
Prof. Macvane	12. European History from the middle of the Eighteenth Century	3	57 Se., 45 Ju., 4 So., 4 Sp., 1 Gr.	111
Dr. Hart	13. Constitutional and Political History of the United States (1789–1850). — Lectures	3	28 Se., 28 Ju., 4 So., 2 Sp., 4 Gr.	66
Prof. Torrey	14. Forms of Government and Political Constitutions (particularly in Continental Europe) since 1789	2	12 Se.	12
Prof. Torrey and Dr. Channing	15. History of Modern Treaties. — Elements of Public International Law	3	11 Se., 1 Gr.	12
Prof. Everett	16. Studies in the Comparative History of Religions, particularly the Vedic, the later Brahmanic, the Buddhist, the Mazdean, and the Chinese	2	1 Se., 1 Gr.	2
Prof. Emerton	17. Practice in the Study and Use of Historical Sources. — Subject for the year: Church and State in the Eleventh Century. — (Each student prepared six Theses)	2	2 Gr.	2
	ROMAN LAW.			
Prof. Young	1. Obligations and Procedure. — Institutes of Gaius and Justinian. — Selections from the Digest. — Gneist's Institutionum et Regularum Juris Romani Syntagma. — Mommsen and Krueger's Corpus Juris Civilis, (Vol. I.)	3	9 Se., 4 Ju., 2 So., 1 Sp., 2 Gr.	18
Prof. Young	2. The Law of Property. — Institutes of Gaius and Justinian. — Selections from the Digest. — Gneist's Institutionum et Regularum Juris Romani Syntagma. — Mommsen and Krueger's Corpus Juris Civilis (Vol. I.)	1	5 Se., 1 Ju., 2 So.	8
Prof. Gurney	3. The Law of Inheritance	1 or 2	Omitted in 1883–84.	

ELECTIVE STUDIES. — CONTINUED.

	FINE ARTS.			
Mr. Moore	1. Principles of Delineation, Color, and Chiaroscuro. — Lectures (once a week) with collateral reading. — Practice of Drawing (four hours a week)	3	5 Se., 4 Ju., 11 So., 6 Sp., 3 Sc.	29
Mr. Moore	2. Principles of Design in Painting, Sculpture, and Architecture. — Lectures (once a week), with collateral reading. — Practice in Drawing (from three to six hours a week)	2	1 Se.	1
Prof. Norton	3. Ancient Art. — Lectures, with collateral reading	3	43 Se., 37 Ju., 37 So., 2 Fr., 6 Sp., 1 Gr., 1 Sc.	127
Prof. Norton	4. Florentine Art	3 1st half-year	Omitted in 1883–84.	
Prof. Norton	5. Venetian Art	3 2d half-year	Omitted in 1883–84.	
Prof. Norton	6. Greek Art	3	Omitted in 1883–84.	
Prof. Norton	7. Romanesque and Gothic Art. — Lectures, with collateral reading	3	19 Se., 3 Ju., 1 So., 1 Gr.	24
	MUSIC.			
Prof. Paine	1. Harmony. — Richter's Harmony. — Written exercises, played over and corrected in the class-room	3	3 Ju., 10 So., 1 Sp.	14
Prof. Paine	2. Counterpoint. — Richter's Counterpoint. — Exercises in Harmony (four and five part chorals), Counterpoint (in two, three, and four parts), Double Counterpoint, Imitative Counterpoint (in two and three voices). — Composition of Songs with piano accompaniment, Part Songs (mixed and male voices), and Organ Preludes	3	1 Se., 2 Ju., 2 So., 1 Di.	6
Prof. Paine	3. History of Music. — Lectures, with instrumental illustrations and collateral reading	3	20 Se., 5 Ju., 1 So., 1 Fr., 1 Sp.	28

Prof. Paine	4. The Instrumental Music of Haydn, Mozart, Beethoven, and their successors. — Pauer's Musical Forms. — Lectures and analyses of the principal Sonatas and Symphonies of Haydn, Mozart, and Beethoven	1	2 Se., 1 Ju., 5 So., 1 Gr.	9
Prof. Paine	5. Canon and Fugue. — Composition of various kinds of Canons, and of two, three, and four part Fugues. — Richter's Canon and Fugue	3	2 Se., 1 Gr.	3
Prof. Paine	6. Free Thematic Music. — Composition of various Dance forms, Songs without words, Nocturnes, Marches, Rondo, and of Sonatas in three or four movements for the Pianoforte. — Lectures on the Modern Forms of Instrumental Music	2	2 Se., 1 Gr.	3
	MATHEMATICS.			
Prof. C. J. White	1. Problems in Plane Trigonometry. — Spherical Trigonometry (Wheeler). — Navigation and Nautical Astronomy. — American Nautical Almanac	2	2 Ju., 3 So.	5
Dr. B. O. Peirce	2. Differential and Integral Calculus (First Course). — Lectures on the Calculus, with applications to Mechanics and Hydrostatics. — Byerly's Differential Calculus	3	2 Se., 2 Ju., 26 So., 1 Sp.	31
Prof. Peirce	3. Determinants. — Analytic Geometry (Right Line; Conic Sections; Right Line in Space; Plane) with Determinant applications, including the theory of the Discriminant of a Conic. — Muir's Theory of Determinants, to page 149; Salmon's Conic Sections, Chapters I., II., V., X., XI., XII., XIII.; Exercises and additional developments	3	2 Ju., 7 So.	9
Dr. B. O. Peirce	4. The Elements of Mechanics (for students who take or have taken Course 2)	1	1 Ju., 1 So.	2
Prof. Byerly	5. Differential and Integral Calculus (Second Course)	3	9 Ju., 1 So.	10
Prof. Pierce	6. Quaternions; Theoretical Mechanics (General Principles and Dynamics of a Particle). — Hardy s Introduction to Quaternions; Tait and Steele's Dynamics of a Particle, with Quaternion applications	3	7 Ju., 1 Law	8
Prof. Eustis	7. Descriptive Geometry and Perspective. — Church's Descriptive Geometry	3	2 Se., 1 So., 1 Sp., 6 Sc.	10

ELECTIVE STUDIES. — CONTINUED.

Prof. Byerly	8. Analytic Mechanics	3	3 Se., 2 Ju., 1 So.	6
Prof. Peirce	9. Quaternions (Second Course).—Tait's Quaternions, Chapters IX., X., XI.	2	2 Se., 1 Gr.	3
Dr. B. O. Peirce	10. Arbitrary Functions and the Theory of the Potential. — Lectures on the Theory of the Newtonian Potential with applications to problems in Gravitation and in Electricity. — Riemann's Schwere, Elektricität, und Magnetismus. — Minchin's Treatise on Statics (Chapter XV.). — Cummings's Theory of Electricity	1	2 Se., 1 Gr.	3
Profs. Peirce and Byerly, and Dr. B. O. Peirce	Meetings for Mathematical Discussion, managed by a committee of students, and participated in by instructors and graduate and undergraduate students, were held once a week throughout the year. The attendance was good, and a few students did a good deal of work in connection with the meetings	1		
	Courses of Mathematical Reading, under the supervision of instructors, were pursued by graduate students as follows : —			
Prof. Peirce	Briot et Bouquet, Fonctions Elliptiques, 2e éd., Livres I.-IV.	1	2 Gr.	2
Prof. C. J. White	Gauss, Theoria Motus Corporum Coelestinm	1	2 Gr.	2
Prof. Byerly	Riemann, Partielle Differentialgleichungen. — Ferrers, Spherical Harmonics	1	2 Gr.	2
Dr. B. O. Peirce	Minchin, Uniplanar Kinematics. — Lamb, Motion of Fluids	1	2 Gr.	2
	PHYSICS.			
Prof. Lovering	1. Astronomy, Optics, and Acoustics. — Herschel's Outlines of Astronomy. — Deschanel's Acoustics. — Lectures, with experiments	3	2 Ju., 7 So.	9
Prof. Trowbridge, Dr. Hall, and Mr. Whiting	2. Principles and Methods of Physical Measurements, with Laboratory work in Light, Heat, Electricity, and Magnetism. — Everett's Physical Constants. — Kohlrausch's Physical Measurements	3	3 Se., 9 Ju., 14 So., 1 Sc.	27

Prof. Trowbridge	3. The Conservation of Energy. — Stewart's Conservation of Energy. — Portions of Röntgen's Thermodynamics, Maxwell's Electricity and Magnetism, and Maxwell's Heat. — Lecture notes from Rayleigh's Sound	3	3 Se., 5 Ju., 2 So., 2 Sp.	12
Prof. Lovering	4. The Undulatory Theory of Light. — Deschanel's Electricity and Magnetism. — Lloyd's Undulatory Theory of Light. — Experimental Lectures	3	1 Ju., 2 So., 1 Gr.	4
Prof. Gibbs	5. The Spectroscope and its Applications (Lectures and Laboratory work). — Thermodynamics (Lectures)	3	4 Se., 1 Ju., 2 Sp., 2 Gr.	9
Prof. Trowbridge	6. Experimental Physics. — Cummings's Theory of Electricity. — Laboratory work	3	2 Se., 1 Sp.	3
Prof. Trowbridge	7. Mathematical Physics. — Maxwell's Electricity and Magnetism. — Portions of Mascart and Joubert's Electricity and Magnetism	3	1 Se., 1 Sp.	2
Dr. Hall	8. The Theory of Probability, with application to the Kinetic Theory of Gases	2	Omitted in 1883–84.	
Prof. Trowbridge	Course of reading in Mathematical Physics (Lord Rayleigh's Theory of Sound) under the supervision of the Instructor	3	1 Sp.	1
	CHEMISTRY.			
Mr. Hartshorn	1. Descriptive Chemistry. — Lectures and Laboratory work	3	5 Se., 12 Ju., 64 So., 3 Sp.; 6 Sc.	90
Mr. Huntington	2. Determinative Mineralogy and Lithology. — Lectures and Laboratory work	3	4 Se., 1 Ju., 8 So., 2 Sp., 1 Sc.	16
Prof. H. B. Hill	3. Qualitative Analysis. — Lectures and Laboratory work. — Hill's Lecture notes on Qualitative Analysis	3	8 Se., 20 Ju., 1 So., 1 Sp., 3 Sc.	33
Prof. Cooke and Mr. Huntington	4. Quantitative Analysis. — Fresenius's Quantitative Analysis. — Laboratory work	3	7 Se., 1 Ju., 1 So., 1 Sp., 3 Sc.	13
Prof. H. B. Hill	5. The Carbon Compounds. — Lectures and Laboratory work	3	8 Se., 1 Gr., 1 Sc.	10
Prof. Cooke	6. Inorganic Chemistry (Advanced Course). — Laboratory work, chiefly on Vapor Density, Specific Refractive Power, and Thermo-Chemistry	3	5 Se., 2 Gr.	7

ELECTIVE STUDIES. — CONTINUED.

Prof. Cooke	7. Crystallography and the Physics of Crystals. — Laboratory work in determining and measuring crystals. — Miller's Crystallography	3	1 Se.	1
Prof. Storer	8. Agricultural Chemistry	3	2 Bu.	2
Prof. H. B. Hill	9. Organic Chemistry (Advanced Course). — Experimental investigation in the laboratory	8	1 Se., 1 Gr.	2
	NATURAL HISTORY.			
Mr. Davis	1. Elements of Physical Geography and Meteorology	3	6 Se., 5 Ju., 21 So., 1 Fr., 1 Sp., 6 Sc.	40
Prof. Mark	2. Zoölogy. — Lectures, with collateral reading	3	23 Se., 35 Ju., 38 So., 1 Fr., 3 Sp., 5 Sc.	105
Prof. Goodale	3. Botany. — Lectures and Laboratory work. — Gray's Structural Botany. — Gray's Manual	3	19 Se., 15 Ju., 17 So., 2 Sp., 4 Sc.	57
Prof. Shaler	4. Elementary Geology. — Dana's Manual of Geology. — Excursions	2	22 Se., 25 Ju., 32 So., 3 Fr., 6 Sp., 3 Sc.	91
Profs. Farlow and Faxon	5. Biology. — Lectures (three hours a week). — Laboratory work (six hours a week). — The first half-year was devoted to the study of plants, the second to that of animals		9 Se., 15 Ju., 1 So., 2 Sp., 4 Sc.	31
Prof. Faxon	6. Zoölogy (Advanced Course). — Comparative Anatomy of the Vertebrated Animals. — Three Lectures, besides six hours of Laboratory work, each week		10 Se., 4 Ju., 1 Sc.	15
Profs. Goodale and Farlow	7. Botany (Advanced Course). — Physiological Botany in the first half-year, Cryptogamic Botany in the second. — Two Lectures, with six hours of Laboratory work, each week		10 Se., 1 Ju., 1 Sp., 1 Sc.	13
Prof. Shaler	8. Geology (Advanced Course). — Two Lectures per week, with Field and Laboratory work. — Lyell's Principles of Geology		29 Se., 14 Ju., 2 So., 1 Sp., 1 Gr.	47

Prof. Mark	9. Embryology. — Upwards of nine hours a week of Laboratory work, devoted to the investigation of Spermatogenesis in the case of Amphibia		1 Se.	1
Prof. Hagen	10. General Entomology	2	Omitted in 1883–84.	
Prof. Goodale	11. Advanced Morphology and Histology of Phanerogams. — Experimental Vegetable Physiology	3	Omitted in 1883–84.	
Prof. Farlow	12. Structure and Development of Cryptogams. — Laboratory work (twelve hours a week)		1 Sp.	1
Dr. Harrison	13. Anatomy of Domestic Animals. — Lectures and Recitations (three hours a week). — Laboratory work, twelve hours a week from October to April. — Channeau's Comparative Anatomy		11 Vet.	11
Prof. Shaler	14. Palaeontology. — Two Lectures each week. — Nicholson's Palaeontology. — Laboratory work		10 Se., 3 Ju., 1 Sc.	14
Prof. Shaler	15. Historical Geology. — Laboratory work and Theses		1 Sc., 1 Sc.	2
Prof. Shaler	16. Geological Field work, equal to ten hours per week throughout the year, and a report on the geology of the district assigned		1 Se., 1 Gr., 1 Sc.	3
Prof. Shaler	17. History of Geological Opinions	1	Omitted in 1883–84.	
Prof. Whitney	18. Economical Geology. — Laboratory and Field work, with collateral reading. — Thesis		19 Se., 1 Jr., 1 So., 1 Sp., 1 Gr.	23

Eighteen of the seventy whose names were on the roll failed to complete the year in any study. Of the fifty-two who took the required examinations in at least one study, only eighteen persevered to the end in all the studies which they took at the start. Twenty-two persevered in four of more courses, thirty-two in three or more. Thirty passed successfully in all the courses which they completed. The following table gives a synopsis of the year's work of each student. The numbers in the first column stand for students; those in the second, third, and fifth columns represent amounts of work, estimated as in the case of undergraduates, the unit being a full elective course, or a prescribed course having three exercises a week. A year's work for an undergraduate varies from 5.3 to 4.2 courses.

Students.	Number of courses taken.	Number of courses completed.	Average per cent.	Number of courses in which the student failed.	Students.	Number of courses taken.	Number of courses completed.	Average per cent.	Number of courses in which the student failed.
1	5.2	4.2	96		27	3.5	2.5	57	
2	5.3	5.3	95		28	3.4	.7	57	
3	4.7	.5	93		29	7.9	7.9	56	1.
4	3.3	3.3	90		30	7.7	4.5	56	
5	2.	1.	88		31	6.	5.5	50	2.
6	4.5	.5	86		32	5.3	5.3	50	.6
7	3.8	1.	85		33	5.4	1.	50	
8	5.	4.	84		34	5.1	4.8	47	2.
9	4.	3.	80		35	4.2	3.5	45	.5
10	3.5	1.5	76		36	4.2	3.5	44	1.5
11	5.3	5.3	74		37	4.5	2.7	44	.5
12	5.	5.	74		38	5.3	4.4	43	1.4
13	4.4	4.4	71		39	4.3	4.3	43	1.6
14	5.3	5.3	70		40	4.7	4.	42	2.
15	4.9	1.3	67		41	4.	2.	42	
16	3.5	3.5	66		42	5.3	4.6	41	1.6
17	9.8	9.8	65	.5	43	5.3	1.7	40	1.2
18	5.3	5.3	64		44	6.	1.3	40	1.
19	4.3	4.3	64		45	2.5	.5	40	
20	4.	3.	63		46	.8	.3	40	
21	9.4	9.4	61		47	5.7	3.3	39	.6
22	3.5	3.5	61		48	5.3	1.3	36	1.3
23	4.1	4.1	60		49	4.	1.	35	1.
24	2.5	1.5	60	.5	50	4.2	4.2	31	4.2
25	5.3	5.3	59		51	4.	2.	19	2.
26	3.4	3.	57	1.	52	3.	2.	1	2.

From this table and from the corresponding statistics for 1882–83, the following averages are obtained: —

	1882–83.	1883–84.
Average number of courses completed by each student	3.69	3.41
Average per cent	58.2	58.9
Average amount of failure for each student	.53	.58

The number of Special Students who, in each of these two years, earned certificates of proficiency by attaining a mark of seventy-five per cent in one or more studies was as follows: —

	1882–83.	1883–84.
In studies amounting to less than one full course	4	7
" " at least 1, but less than 2 courses	10	13
" " " 2, " 3 "	4	4
" " " 3, " 4 "	..	2
" " " 4, " 5 "	3	1
" " " 5, " 6 "	..	1
" " " 6 courses	1	..
Whole number entitled to certificates	22	28

The number of those who attained an average of seventy-five per cent on four or more courses last year was three. The number in 1882–83 was four.

In the scheme of instruction for 1884–85, which was issued, as usual, early in May, the Faculty were able to announce some valuable additions and improvements. The following new courses appeared in the list: —

History of the Babylonian Assyrian Religion. *One hour.* Professor Lyon.

Ethiopic. *One hour.* Professor Toy.

Pāli. *Two hours.* Professor Lanman.

History of Greek Literature. *Three hours.* Professor Allen.

Studies in Greek History, with especial reference to Topography and Monuments. *One hour.* Professor Goodwin.

History of the later Greek Philosophy, — the Stoics, Epicureans, and Skeptics. *Two hours, with a third at the pleasure of the Instructor.* Professor Greenough.

English Composition. *Three hours.* Mr. Wendell.

History of German Literature and Art. *Three hours.* Dr. Francke.

Romance Philology. *Two hours.* Professor Sheldon.

French Conversation and Composition. *One hour.* Mr. Métivier.

The same (Advanced Course). *One hour.* Mr. Cohn.

Philosophical Theism (History of the chief philosophical controversies about the Being and Nature of God). *Three hours, first half-year.* Dr. Royce.

History of Financial Legislation in the United States. *One hour.* Professor Dunbar.

History of the North American Colonies and their Growth into a Federal Union (1600–1789). *Three hours.* Dr. Hart.

Ancient Art. *One hour.* Mr. A. R. Marsh.
The Art of the Middle Ages and the Renaissance. *One*
Higher Principles of Analytic Mechanics. *Three hours*
Elementary Course in Electrical Potential. *Three hours*
Palaeontology (Advanced Course). *Two hours.* Profe

Some of these courses take the place of others
a few instances, permanently withdrawn from t
signed to be given alternately with such course
hour courses in Fine Arts are a temporary substi
Norton's courses, omitted on account of his abs
The introduction of a new course in American
much more thorough treatment of that subject tha
received in the single course devoted to it. The
modified so that the two courses will be consecutive
embrace the history of the country from the year
ning of the civil war.

Besides the establishment of new courses, some
in the existing courses were made. Professor Chi
English Literature was divided into two courses,
nately, one devoted to Chaucer alone, the other to
In the same department the course in Oral Discussi
merly given by Professor A. S. Hill, but has been
for a number of years, was revived and placed in ch
In Greek, the number of Composition courses was
to two, with the provision, however, that the more
can be taken twice, the work being changed from
this way a saving of time for the instructors wa
diminishing the amount of instruction offered. In
half-course in the Elements of Mechanics was c
course.

In all, one hundred and fifty-six courses of instru
for the present year. Of these, one hundred and
rated as full courses, and thirty-three as half-course
as heretofore, each full laboratory course as a thre
assign two and a half hours to each study in which
two exercises a week, with a third at the pleasure
the aggregate amount of instruction offered in
three hundred and eighty-two hours a week. T
shows the number of hours a week of instruction
courses in the several departments for the last twel

Number of exercises per week in elective courses offered in	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.
Semitic Languages	3	3	3	3	3	4	4	11	8	13	16	17
Sanskrit and Zend	3	6	3	3	3	6	6	11	10	10	10	10
Greek	22	23	25	23	23	24	26	29	25	25½	26	29
Latin	15	15	19	20	18	22	18	22	26	23	27	21
Greek and Latin .	. .	. .	3	3	2	2	3	3	8	3	6	8½
English	8	5	8	11	14	15	16	16	10	15	15	19½
German	8	11	14	17	19	24	25	22	23	23	21	20
French	14	18	12	15	15	15	15	14	18	14	16	20
Italian and Spanish	11	14	17	17	17	19	20	20	20	18	12	18
Philosophy . . .	12	9	9	12	12	18	23*	24	17	20	20	21½
Ethics	3	3	3	3	3	3	3	3	3	4	4	4
Political Economy	3	6	6	6	6	6	9	9	7	7	14½	14½
History	17	20	20	23	23	25	25*	30	35	35	32½	33
Roman Law . . .	. .	3	3	3	3	3	4	4	5	4	4	4
Music	8	11	14	11	12	13	13	15	14	14	11	7
Fine Arts	. .	6	9	4	6	9	8	6	8	11	15	15
Mathematics . .	20	24	20	23	24	28	30	26	26	24	25	27
Physics	12	14	15	15	17	22	21	19	19	20	23	20
Chemistry . . .	14	14	14	18	18	21	26	26	23	23	26	24
Natural History .	23	23	23	25	24	30	42	46	36	45	49	49
Aggregate . .	196	228	240	255	262	308	337	356	347	351½	373	382

In a communication received April 15, the Board of Overseers invited the attention of the Faculty to the report of a special committee containing certain recommendations relating to the study of English. The measures recommended were: (1) that the conditions of admission should be so changed as to insure greater attention in schools to the study of English Literature, — including modern history, especially that of England and the United States, — and to the practice of Composition; (2) that English Composition should be made a part of the prescribed work of the Freshman year; (3) that more practice in composition than is now afforded should be given to the students; (4) that Honors in English should be given at graduation; (5) that courses of lectures in English Literature should be instituted; (6) that more attention should be paid to instruction in Elocution.

Independently of these recommendations, the Faculty had voted to insert in the Catalogue a notice that the passages set for translation

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* Elective courses amounting to four hours a week in Philosophy and six hours in History were established in 1878 to take the place of the prescribed work in those subjects, which was abolished at that time. They formed no actual increase in the amount of instruction given.

(from Greek, Latin, French, and German) in the examinations for admission must be rendered into simple and idiomatic English, with a request to teachers to insist on the use of good English as an essential part of the candidate's training in translation; and Dr. Royce, who had been appointed Instructor in Forensics for the present year, adopted, with the approval of the Faculty, a new plan for conducting the work in that department, by which it is hoped that better results may be obtained. With the coöperation of instructors in nearly all departments, Dr. Royce prepared a list of over two hundred and fifty topics, which was printed and distributed at the beginning of the year. From this list the subjects of all forensics written this year are to be selected. The number of forensics heretofore required has been four in each of the last two years. The new plan provides, in the first place, a brief course of lectures on the subject of argumentative composition. The work of the students consists of (1) a forensic, treating some topic that can be profitably discussed within a moderate compass; (2) a thesis in forensic form (corresponding to the second and third forensics of the old system) on a subject that demands a fuller and more elaborate treatment: and (3) a final examination, in which each student is required to write an essay, in the examination room and within three hours, on a subject assigned at the time by the Instructor from a list of six subjects previously selected by the student. The advantages which it is hoped will be secured by this plan are, that the work in forensics, being thus systematized and furnished with a final examination, will acquire something of the character of a regular course and thereby assume greater importance in the eyes of the student; and that through the wide range of topics presented, by which the students in almost any course are enabled to treat of subjects that have a direct bearing upon their chosen studies, elective work and forensic work will be brought into close relation with one another, to their mutual advantage.

Of the recommendations of the Board of Overseers, the first was referred by the Faculty to a committee which then had under consideration the subject of the requirements for admission, and which has not yet made its report. The second, third, and fourth recommendations have been carried out to some extent this year. The proposition to make English Composition a part of the prescribed work of the Freshman year had been before the Faculty more than once; but no one had been able to suggest a practicable plan. The difficulty has now been removed, however, by the introduction of elective studies into the Freshman year, to be described presently. Of the seven hours a week of prescribed work appointed for the present

Freshman class, three are given to Rhetoric and English Composition. The addition of a full elective course in English Composition has been recorded above. Honors in English have been established, the conditions being distinguished excellence in six elective courses in the department, including at least one in Composition. In regard to the suggestion that courses of lectures should be established in English Literature, it may be remarked that besides the lectures on certain authors which constitute a part of the instruction in Prescribed Rhetoric, the elective studies in English Literature open to a student amount to six full courses, — which is half of the whole amount of elective work required of him after his Freshman year. Nevertheless the field is far from being adequately covered, and the Faculty would gladly see additional courses established. In Elocution instruction is provided for voluntary classes, and last year the experiment was tried of allowing a course of two hours a week in this study to count as a half-course of elective work. The Faculty regard the plan as still on trial, and were not prepared to go further and establish a second course in Elocution when the matter was before them in the spring.

Besides Honors in English, the Faculty also established Honors in Modern Literature, the conditions of attaining which are distinguished success in six elective courses, — two in English, two in German, and two in French literature; ability to read German and French with facility at sight; and a thorough acquaintance with the works of some author to be selected by the candidate himself with the approval of the committee of examiners. An advanced course in Italian or Spanish may be substituted for one of the French or German, but not for either of the English courses required.

The meetings of the Faculty during the greater part of the past year were chiefly occupied with the discussion of proposed changes of a serious character, in the requirements for admission. The subject was finally referred to a committee of eleven members, with the President as chairman, who gave much time and labor during the closing months of the College year to the preparation of plans. They had not yet completed their work when the year came to an end.

They had however, before that time, reached the conclusion that whatever scheme of admission requirements might eventually be adopted, the Freshman work would be made in large part elective: and they accordingly obtained leave to bring in a plan of studies for the present Freshman year, which with slight modifications was adopted.

Under this plan, which is now in operation, the following studies are prescribed for all Freshmen: Rhetoric and English Composition.

three hours a week; German or French (the one
the student for admission), three hours a week;
istry and Physics, each once a week for a half-yea
these prescribed studies, every Freshman is requ
full courses, or their equivalent, of elective study;
courses, not more than two can be taken in any on

The list of elective studies open to Freshmen
distributed in the summer vacation. In each of t
Greek, Latin, Mathematics, and Physics, a group
appeared in place of the old prescribed work, and t
a limited number of elective courses in other depa
partments, and the number of courses in each, in
were as follows: —

	Full Course
Greek	5
Latin	4
German	2
French	2
History	1
Mathematics	3
Physics	2
Chemistry	2
Natural History	4
Total	25

These figures, with their total equivalent to
courses, — of which thirteen and a half represent
work and are not included in the table on page
whole amount of instruction provided for Freshn
choice open to any one student was in the natu
less extensive, since the courses in many of th
graded to suit students of different degrees of prof
no Freshman was allowed to concentrate his wo
more than two courses in any department.

The Freshmen were strongly urged to make
studies with the utmost care, seeking the best
reach, particularly that of their former teachers
have heeded this injunction, and their choices
below, are on the whole encouraging. To the
teachers is probably due the fact that Greek,
matics, which have now for the first time been ma
in College, have attracted the largest number of s

Whole number of Freshmen	255
Number of Freshmen taking one or more elective courses in	
Greek	163
Latin	196
German	26
French	98
History	131
Mathematics	141
Physics	25
Chemistry	11
Natural History	50
Number of Freshmen whose choice includes studies in Greek, Latin, and Mathematics	83

This scheme of Freshman studies has been adopted for the current year, and is not to be regarded as permanent in its present shape. No final disposition of the matter can be reached until the character of the admission requirements, with which the work of the Freshman year must necessarily stand in close relation, is determined. The discussion of that momentous question will be resumed during the present year. To devise a plan which shall give to what are called modern studies an opportunity to show their worth as preparatory training for a liberal education, without endangering the position of the old studies, whose value has been proved by long experience, is the problem before the Faculty. With its wise solution the interests of education are deeply concerned. It is a question which neither prejudice nor innovating zeal can fitly approach. It demands the most careful and candid inquiry, to ascertain existing facts and to anticipate the remote results of measures proposed. It fully merits the long and patient deliberation which it is receiving at the hands of the Faculty.

CLEMENT L. SMITH, *Dean*.

NOVEMBER 22, 1884.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I have the honor to submit the following report on the state of the Graduate Department for the year 1883–84: —

The number of students in the department was eighty-four. Of these, sixteen were persons studying at the University, without being candidates for a degree or holders of fellowships; sixty-one were candidates for the degree of Master of Arts, Doctor of Philosophy, or Doctor of Science; and eight (including one candidate for the degree of Ph.D.) were holders of fellowships.

Nineteen persons were admitted to candidacy for the degree of Master of Arts, and the whole number of candidates for that degree

was twenty-one; of whom seven withdrew, and four
degree at the close of the year.

This enumeration does not include those who were
degree of Master of Arts in connexion with a pro
The number of these persons was nine; one in Divi
and two in Medicine.

Thirteen persons were admitted to candidacy f
Doctor of Philosophy and Master of Arts, and the
candidates for that degree was thirty-four; of w
withdrawn, one has become a candidate simply f
Master of Arts, five received the degree of Doctor
the end of the year, and seventeen are still candid
candidate for this degree took the degree of A.M.
year, but still continues his candidacy for the degree

Two persons were admitted to candidacy for the
of Science, and the whole number of candidates fo
six; of whom two have withdrawn, one received
end of the year, and three are still candidates for it.

The following are the names of persons admitte
recommendation of the Academic Council, at Comme

A.M.

Joseph Randolph Coolidge, A.B. 1883.
Harold Clarence Ernst, A.B. 1876, M.D. 1880.
James Newton Garratt, A.B. 1883.
Ernest Flagg Henderson, A.B. 1883.
Charles Austin Hobbs, A.B. 1880.
Horace Addison Hoffman, A.B. (*Indiana Unive*
Herbert Eveleth Greene, A.B. 1881.
Berwick Manning, A.B. (*Amherst College*) 1882.
Alanson Herbert Mayers, A.B. 1881.
John Farwell Moors, A.B. 1883.
Samuel Newell Nelson, A.B. 1878, M.D. 1882.
Walter Ferris Price, A.B. (*Haverford College*)
William Stanford Stevens, A.B. 1880, M.D. 18
Merle St. Croix Wright, A.B. 1881.
Theodore Lyman Wright, A.B. (*Beloit College*)

A.M. as an adjunct to D.B.

Arthur Anderson Brooks, A.B. 1879

AM. as an adjunct to LL.B.

Harry W. Mack, A.B. (*College of City of New Y*
Henry Melville, A.B. (*Dartmouth College*) 1879.
James Parker Parmenter, A.B. 1881.
William Andrews Pew, A.B. 1880.
Edward Lothrop Rand, A.B. 1881.
Winthrop Howland Wade, A.B. 1881.

A.M. as an adjunct to **M.D.**

Frank Herbert Daniels, A.B. 1879.
Herbert William Newhall, A.B. 1879.

Ph.D. and **A.M.**

Herbert Morison Clarke, A.B. 1878, A.M. 1879.

Department, Philology. *Subject*, Greek and Latin Literature. *Thesis*, "Ques nes de Synizesi Homerica."

Edward Southworth Hawes, A.B. 1880, A.M. 1882.

Department, Philology. *Subject*, Classical Philology. *Thesis*, "Summarium sus Plautini in Enuntiationibus Condicionalibus."

Charles Bingham Penrose, A.B. 1881.

Department, Physics. *Subjects*, Heat, Magnetism, and Electricity. *Thesis*, The Mathematical Theory of Thermo-Electricity; and the Relation between hermo-Electricity and Superficial Energy."

Charles Robert Sanger, A.B. 1881, A.M. 1882.

Department, Physics. *Subject*, Chemistry. *Thesis*, "The Constitution of ro-mucic Acid."

Harold Whiting, A.B. 1877, A.M. 1878.

Department, Physics. *Subject*, Modern Mathematical Methods as applied to ydrodynamics, Electricity, Magnetism, and Heat. *Thesis*, "A New Theory Cohesion, applied to the Thermodynamics of Liquids and Solids."

S.D.

William Trelease, S.B. (*Cornell University*) 1880.

Department, Natural History. *Subjects*, Botany and Entomology. *Thesis*, Observations on several Zoogloeae and related forms."

The Parker, Kirkland, and Walker Fellowships were held by the llowing persons during the year 1883–84: —

Parker Fellowships.

Frank Nelson Cole, A.B. 1882, studying Mathematics.
Harold North Fowler, A.B. 1880, studying the Classics.
William Patten, S.B. 1883, studying Zoölogy.
Edward Emerson Phillips, A.B. 1878, Ph.D. 1880, studying the Classics.

John Thornton Kirkland Fellowship.

Paul Shorey, A.B. 1878, studying the Classics.

James Walker Fellowship.

Benjamin Rand, A.B. 1879, A.M. 1880, studying Philosophy.

All the holders of these fellowships pursued their studies in Europe during the academic year, except Mr. Rand, who was obliged by illness caused by overwork to return to this country before the end of the year. Mr. Patten took the degree of Ph.D. at the University of Bonn. Dr. Phillips and Mr. Shorey withdrew from their fellowships at the end of the year, both gentlemen having done excellent work in the department of Classical Philology. Messrs. Cole, Fowler, Patten, and Rand were reappointed to their respective fellowships for the year 1884–85.

The following new appointments to fellowships were made at the close of the year: —

To a Parker Fellowship.

James Richard Jewett, A.B. 1884, a distinguished student of the Semitic Languages, who purposes to continue the study of those languages in the East and in Germany.

To the Kirkland Fellowship.

John Ulric Nef, A.B. 1884, a distinguished student of Chemistry, who purposes to continue that study in Germany.

The Harris Fellowship and the Rogers Scholarship are bestowed in accordance with recommendations of the College Faculty, and are under the supervision of that Faculty. They were held by the following persons during the year 1883–84: —

Harris Fellowship.

Charles Hall Grandgent, A.B. 1883, studying Modern Languages.

Rogers Scholarship.

Henry Edwards Scott, A.B. 1881, studying History.

On the 30th of January 1884, the Corporation voted to appropriate, for the present, a portion of the income of the fund then recently bequeathed without restrictions to the University by the late Henry T. Morgan, Esq., of New York, to the establishment of graduate scholarships in the department of Arts, and requested the Academic Council to prepare rules for these scholarships. Four scholarships on this foundation have been established, with an income of five hundred dollars each; and are now named the Morgan Fellowships.

The Morgan Fellowships are assigned to persons undertaking advanced liberal studies in the departments in which the degrees of Doctor of Philosophy and Doctor of Science are given; that is, at present, in Philology, Philosophy, History, Political Science, Mathematics, Physics, Natural History, and Music. No academic degree is required as a qualification, nor are the incumbents of these fellowships necessarily candidates for any degree. But every applicant for appointment must exhibit proof of such previous training, attainments, and capacity, as promise special fitness for the work which he purposes to undertake; and the holder of a fellowship must carry on hisstudies in Cambridge throughout the academic year, under the supervision of the standing committee in the department in which his studies lie, and is forbidden to engage in any other occupation, except such public instruction as may have been approved by the Academic Council. The term of appointment to a Morgan Fellowship is one year, but the holder is eligible for appointment for a second year.

The following persons were appointed to these fellowships for the year 1884–85: —

Morgan Fellowships.

William George Brown, S.B. (*Univ. Virginia*) 1877, a student of Chemistry;

Horace Addison Hoffman, A.B. (*Indiana Univ.*) 1881, A.M. (*Harvard*) 1884, a student of Classics;

Leander Miller Hoskins, S.B. and B.C.E. (*Univ. Wisconsin*) 1883, a student of Mathematics;

William Albert Loey, S.B. (*Univ. Michigan*) 1881, S.M. (*Ibid.*) 1884, a student of Zoölogy.

JAMES MILLS PEIRCE,
Secretary of the Academic Council.

14 November 1884.

To the President of the University:

Sir, — As Dean of the Faculty of Theology, I respectfully submit the following report for the academic year 1883–84: —

Twenty-three students were connected with the School during the year. They were distributed as follows: —

Resident Graduates	3
Senior Class	3
Middle Class	4
Junior Class	6
Special Students	7

Of the resident graduates two represented Oberlin Theologica Seminary and one the Union Theological Seminary of New York. The number of students is of interest, as this year was the first to be affected by the great elevation of the standard of admission that had been recently made. For the eleven years previous the number of students, as stated by the Catalogue, had only twice been above the number of last year; and of the twenty-three students of last year, eleven were new men. It would appear then, so far as can be judged by the experience of a single year, that a higher grade of scholarship has been secured with little, if any, loss of numbers.

Besides Divinity students, forty-nine members of the undergraduate department of the College and one member of the post-graduate department attended the exercises of the School.

The nature and amount of instruction given, together with the attendance of Divinity students and of College students, may be learned from the accompanying table, pp. 98, 99.

In addition to the regular courses of the School, lectures were given by officers of the University, not teachers of the School, as follows: —

The Minister and the People: PHILLIPS BROOKS, D.D., of the Board of Overseers.

The Evolution of a Christian Minister: J. F. CLARKE, D.D., of the Board of Overseers.

One Word more about Free-Will: WILLIAM JAMES, M.D., Assistant Professor of Philosophy.

Plato's Idea of Immortality: W. W. GOODWIN, LL.D., Professor of Greek.

The Natural History of Altruism: N. S. SHALER, S.D., Professor of Palæontology.

Vivisection: H. P. BOWDITCH, M.D., Professor of Physiology, and Dean of the Medical Faculty.

These lectures were given in the chapel of Divinity Hall and were very largely attended; the chapel being in every case well filled. They were interesting and instructive.

Professor Lyon's course on the Cuneiform Inscriptions and the Old Testament was also largely attended by persons not connected with the School.

The most marked event in the history of the School during the year was the death of Ezra Abbot, D.D., LL.D., who had held the position of Bussey Professor of New Testament Criticism and Interpretation since 1872. A memorial of Dr. Abbot is to be published by the School, I will therefore simply remark here that his students and his colleagues feel the loss of his personal presence not less than that of the great learning which he brought to the service of his department.

Happily the vacancy left by Dr. Abbot could be at once filled by the election of Joseph Henry Thayer, D.D., to be his successor. The acknowledged position of Dr. Thayer as a scholar, his experience and success as a teacher in a similar department at Andover, his genial personality, the fact that he was the most intimate and confidential friend of Dr. Abbot, and the fact that he was for a year a student in the Harvard Divinity School and that he belonged already to its corps of teachers, — all unite to make this appointment a most desirable one. The appointment of Dr. Thayer is a further illustration of the advantage of the present broad policy of the School, by which it is not limited to a single denomination in its selection of teachers.

In this connection it may be well to bring together into a single view certain lines of development which have been happily completed in the recent history of the School.

The first of these which I will name is that in the direction of the freedom of the students, to which I called special attention in my last report. Marks for absence were first given up at lectures, then at chapel, and finally the student was left free to select the studies which he would pursue and the order in which he would pursue them, subject only to such control as the nature of each study required or as may be necessary in order that no department should be neglected. All that can be further accomplished in this direction is such increase in the number of courses offered as shall make the advantage of this freedom more and more marked.

The second line of development to be noticed is that in the direction of a higher standard of scholarship. The successive steps by which the result now reached has been attained were: The establishment of the degree of Bachelor of Divinity, which was given to such graduates as had reached the required degreee of scholarship in certain branches that were indicated; the doing away with the possibility of graduation, except by winning the degree of Bachelor of Divinity in the manner just stated; the refusal to give scholarships or other pecuniary aid to students who had not reached a percentage of seventy-five per cent on their examinations; and, finally, the refusal to give the degree of Bachelor of Divinity to men who had not received a collegiate education or its full equivalent; and the requiring from Special Students an examination equal to that which had been before required for admission to the Junior class. No further advance would seem possible in this direction, except that increase in the number of students may require a higher standard for the reception of a scholarship. To admit to the School only college graduates would not only be, in my judgment, on general considerations unwise; it would run counter to the terms of the bequest of the Williams Fund, which prescribes that "no student shall be debarred of this charity by reason of not having had a degree at a college."

The third line of development to which I refer is that in the direction of practically carrying out the principle of non-sectarianism which is embodied in the constitution of the School. This prescribes that "no assent to the peculiarities of any denomination of Christians

shall be required either of the instructors or stude
fact, however, up to the year 1879 the School wa
it were strictly a Unitarian organization. All th
Unitarian and so were, with rare exceptions, the

In the year 1879 an appeal was made for the f
of the School. This appeal was addressed as a r
the Unitarian churches of the country. There was
that such an appeal would make it more difficult in
any change in the management of the School so f
nal relations are concerned. To obviate this
Eliot wisely made a fresh and more explicit staten
on which the School was founded. In a public m
First Church in Boston for the purpose of bringin
School before the public, President Eliot said: —

> "The Harvard Divinity School is not distinctively Un
> constitution or by the intention of its founders. The doct
> rian sect, called in this century Unitarian, are indeed entit
> position in the School so long as it exists, simply because
> founded, and for two generations at least has been supporte
> But the government of the University cannot undertake
> Unitarian teachers or to grant any peculiar favors to Unitar

The address of President Eliot, of which the
form a part, was published with other addresses in
was made the basis of the appeal to the churches
of the position of the School made by President
with great satisfaction by the Unitarian body. Th
in which Unitarians should have rights, but no m
to its sense of what was best for itself and was
with its own principles. On the strength of th
given the money which was asked for was soon
indeed overflowing the limit of the request.

Since the events just described five professor
pointed. Of these one is a Unitarian minister, o
layman, two are Baptists, and one is Orthodox Con

The enlarged denominational position of the Scho
nized to some extent by students of Theology. O
students of last year at least six were connected w
other than Unitarian. It so happened that to the
the six largest scholarships awarded during the y
dence may indicate the quality of the men thus
School; while the fact that at the time of the as
incidence was not noticed may illustrate the natu
ment.

The change in the denominational relations of the School has practically been so great and the view of its real position is in many minds so obscure that it may be well that some explicit statement of the position of the School should be made; and especially that some statement should be left on record of the understanding with which the movement above described was carried on.

The fundamental question is obviously as to the meaning of the words "respectful exposition" in the President's address.

When it is remembered that with the exception of the Hancock and Hollis professorships which were founded before the School was established, the endowment of the School has been made by Unitarians, and when it is considered further that the Unitarian body is not merely one denomination among others, but that it differs from most other denominations in points in regard to which they are practically in accord, I think that it would be admitted that the Unitarian doctrine could not be regarded as respectfully entertained if it were not represented by at least two professors, one of whom should be a teacher of Theology.

In regard to this latter point, — namely, that there should be a professor in the School who should teach Theology from the Unitarian standpoint, — it may be remarked that this was explicitly stated after consultation with the President, by Rev. W. M. Salter, who was employed as an agent for the School, and by myself, in our appeals for money.

If it should be thought that putting the teaching of Theology permanently into the hands of Unitarians gives to the Unitarian body an undue advantage, I can suggest no other way by which this difficulty could be avoided than the founding of a new professorship, to be filled by an Orthodox professor of Theology. I know that the idea of a theological school in which opposing systems of Theology are taught strikes many as absurd. A little thought will show, however, that the idea is wholly reasonable.

The first consideration that may be adduced is that theological study has not yet reached the point where it may be regarded as a science. I do not mean that it is nowhere scientifically taught. Each denomination would perhaps claim that in its schools Theology is taught as a science. The existence of other schools however, in which a different form of Theology is taught, would show that the justice of its claim had not yet been acknowledged. In this respect the teaching of Theology is somewhat like that of Philosophy. It is recognized to be a natural and proper thing that different systems of Philosophy should be taught in the same university; for though each may claim that it has reached the truth, the claim of each is disputed by students whose judgment carries weight. It is true even in regard to physical science that, so far as it is progressive, there must be within it departments in regard to which like statements could be made. A few years ago it was not considered absurd that the theory of development by natural selection should have both defenders and opponents among the teachers in Harvard College.

Whether or not Theology can ever become a science in the sense in which I have been using this term, is a question not to be discussed here. It will be admitted, however, that the more nearly it may reach the point of development at which it may be worthy of this name the better; and surely nothing would tend more to accomplish this result than the existence of a school in which different systems of Theology are presented side by side for study and comparison.

A second consideration that may be adduced in this connection is that the study of Theology is largely historical. The history of Doctrine is one of its most important elements. No history, if the phrase may be allowed, is more important than that of the Present. If Divinity students could become acquainted with other existing forms of Theology than their own they would be able to teach their own with far better effect.

It cannot be expected that a professorship like that here indicated would be founded by Unitarians as such or by Orthodox as such. If founded at all it must be by friends of the University who desire to establish theological teaching upon the broadest possible foundation.

While for the reasons that have been indicated certain professors may be selected as representing one denomination or another, it would obviously be a violation of the charter of the School and wholly foreign to its spirit to subject their teaching, or that of any instructor of the School, to a denominational standard. One great object of the institution is to promote the scientific study of Theology, and this end would fail of accomplishment if any test were applied to its teaching of a nature different from that to which teachers of philosophy and science are subjected.

In regard to the three lines of development that have been described it may be remarked that it is a matter for congratulation that such an elevation of the standard of scholarship has been accomplished with so little loss of numbers; that it has been possible to remove so many restrictions from students with no disturbance of the regular working of the School; and that the denominational relations of the School have been so greatly enlarged with no loss of the confidence of that body to which it owes its existence and its support.

The library during the last year has been under the efficient care of Arthur Anderson Brooks, A.M. The library has received during the year the following additions: —

Bound volumes	202
Pamphlets	33
Periodicals	168

The librarian made a careful account of the volumes in the library with the following result: —

Bound volumes	17,284
Pamphlets	2,271
Periodicals	3,366

The number of bound volumes was found to be larger than previous estimates had indicated, owing to the fact that in former enumerations, pamphlets after being bound had still been reckoned as pamphlets and not as volumes.

The card-catalogue increased slowly during the year and a beginning was made in a card subject-catalogue.

I cannot omit reference to the generous donation by Mrs. Ezra Abbot of a large part of Dr. Abbot's library, the gift including nearly four thousand volumes. Mrs. Abbot, without making any formal condition upon which the gift depends, yet states in her letter of donation that she should be glad to be assured of two things: first, that the collection shall be kept, under the title of the Ezra Abbot Library, so far intact as is consistent with its usefulness; second, that there shall be secured as soon as possible for this collection, and for the rest of the Divinity School library, a more adequate and safe place of deposit. The nature of the collection will probably make it easy to fulfil to a large extent the first of these requests. The second brings to light a need of the School that has been long felt and which is made by this gift more pressing, that of a fire-proof library distinct from Divinity Hall, but easily accessible from it. This is important for the preservation of our books, for the encouragement of future donations, and for making possible the transferance from Gore Hall of volumes important to students of Theology. Such transferance is made to some departmental libraries to the great advantage of students in these departments. It cannot be done in the case of Divinity library, as the risk from fire is too great.

Among the donations received during the last year may be mentioned an anonymous gift of $750, and a gift of $450 from George S. Hale, Esq. This latter amount is, at the request of Mr. Hale, devoted to the purchase of books for the library.

Instructors.	Subjects.	Attendance.		
		Divinity Students.	College Students.	Hours per week.
	STUDIES CONNECTED WITH THE OLD TESTAMENT.			
Prof. Lyon	1. Hebrew. — Davidson's Grammar. — Explanation of parts of the Pentateuch, Historical Books, and Psalms	3	2	3
Prof. Toy	2. Hebrew. — Ewald's Syntax. — Interpretation of parts of the Prophets and Poetical Books. — Textual Criticism (Lectures)	2	2	2
Prof. Lyon	3. Aramaic. — Grammars of Nöldeke and Riggs. — Rödiger's Chrestomathia. — Interpretation of selections from the Peshitto and the Targums, and from Daniel and Ezra		2	2
Prof. Lyon	4. The Cuneiform Inscriptions and the Old Testament (Lectures)	5	1	1
Prof. Toy	5. History of Israel, political and social, from the earliest time to the present (Lectures)	10		2
Prof. Toy	6. History of the Religion of Israel (Lectures). — Schultz's Alttestamentliche Theologie	4		1
	The Semitic Seminary met twice a month	12		
	STUDIES CONNECTED WITH THE NEW TESTAMENT.			
Prof. Abbot	1. Textual Criticism; Hermeneutics; Exegesis of the Gospels begun	5		2
Prof. Abbot	2. Exegesis of the Gospels continued; Lectures on the History of the Canon	6		2

	COMPARATIVE RELIGION.			
Prof. Everett	Studies in the Comparative History of Religions (particularly the Vedic, the later Brahmanic, the Buddhist, the Mazdean and the Chinese)	10	1	
	ETHICS.			
Prof. Peabody	Ethical Theories and Social Problems. — Practical examination of the questions of Charity, Temperance; Labor, Prisons, Divorce, etc. — Lectures and Essays	5	8	1
	BIBLICAL THEOLOGY.			
Dr. Thayer	The Doctrines of Sin and of Redemption, as taught in the New Testament	5		1
	THEOLOGY.			
Prof. Peabody	1. The Philosophy of Religion. — Caird's Philosophy of Religion. — Schleiermacher's Reden über die Religion. — Lectures	10	5	1
Prof. Everett	2. Systematic Theology begun: The Psychological Basis of Religious Faith	8		2
Prof. Everett	3. Systematic Theology continued: The Content of Christian Faith	9		
	HOMILETICS AND PASTORAL CARE.			
Prof. Peabody	1. The Structure and Analysis of Sermons	8		1
Prof. Peabody	2. Each student writes six sermons during the year, three of which are preached before the two upper classes and criticised by students and teacher; the rest are criticised privately both as to composition and delivery, in preparation for the public preaching named below	10		1
Prof. Peabody	3. Liturgics: the History of Worship	5		1
Prof. Peabody	4. Pastoral Care and the Conduct of Public Worship. — Twelve Lectures	16		
	ELOCUTION.			
Mr. Jones	Class instruction once a week. Private instruction for members of the Senior Class.			

General Exercises.

Preaching by students in the Chapel of the School, open t
a week.

Debate by students, each speaker being criticised in the pre
Once in two weeks.

Conference Meetings, conducted by students, alternating wi
in two weeks.

Morning Prayers, conducted by teachers and students.

C. C. E

November, 1884.

To the President of the University:

Sir, — I beg to submit the following report upo
for the academic year 1883–84: —

The table on pp. 104, 105 gives the courses of stu
during the year, the names of the instructors, the
the number of exercises per week in each course, a
students who offered themselves for examination i
the end of the year.

The following table exhibits the attendance at t
the last fourteen years: —

	1870–71.	1871–72.	1872–73.	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.
Whole no. of students in the School	165	138	117	141	144	173	199	196	16
No. that were in the School during the whole year	107	107	109	121	130	153	168	172	13
No. that were in the School only part of the year .	58	31	8	20	14	20	31	24	3
Average number . . .	136	123	113	131	137	163	184	183	15

The following table exhibits the School as divided
the establishment of the three-years' course and th
admission: —

	1877–78.	1878–79.	1879–80.	1880–81.	1881-
First Year . . .	72	63	78	57	61
Second Year . .	79	50	32	58	41
Third Year . . .	—	—	21	14	2
Special Students .	31	47	46	32	3

In regard to the foregoing table it is to be observed that, although the three-years' course went into operation at the beginning of 1877–78, there was no third-year class until 1879–80. It is also to be observed that the second-year class of 1877–78 did not take the three-years' course, but was graduated at the end of the second year, that class having entered the School before the three-years' course went into operation.

The following table exhibits the results of the examinations for admission in each year since they were established: —

	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.
Offered	16	15	18	25	19	12	12
Admitted	7	7	12	13	16	10	5

The following table exhibits the results of the examinations for a degree in each year since the establishment of the three-years' course: —

	1877–78.			1878–79.			1879–80.			1880–81.			1881–82.			1882–83.			1883–84.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year .	66	51	15	50	42	8	73	69	4	45	43	2	49	44	5	46	44	2	51	41	10
Second Year	66	47	19	40	39	1	28	26	2	49	46	3	38	37	1	36	34	2	35	31	4
Third Year .							22	18	4	18	18	0	36	33	3	21	19	2	26	25	1

In regard to the foregoing table it is to be observed that it includes no Special Students, and hence that all the applicants included in it were either graduates of colleges or had passed the examination for admission. Of course this remark does not apply to the second-year class of 1877–78, and this accounts in part for the much greater number of failures in that class.

The following table exhibits the results of the examinations for the honor degree in each year since it was established: —

	1878–79.			1879–80.			1880–81.			1881–82.			1882–83.			1883–84.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
Second Year .	26	12	14	17	7	10	39	16	23	27	11	16	32	11	21	21	7	14
Third Year . .				9	7	2	5	3	2	13	10	3	11	10	1	8	5	3

The following table exhibits the number of students who, since the establishment of the three-years' course, have been examined for a degree in the studies of any year without having been members of the School during that year: —

	1877-78.			1878-79.			1879-80.			1880-81.			1881-82.			1882-83.			1883-84.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year .	5	2	3	3	2	1	6	4	2	6	4	2	2	1	1	3	3	0	7	6	1
Second Year							1	1	0												
Third Year.							5	4	1	4	4	0	10	8	2	3	2	1	3	3	0

The following table exhibits the number of students who have entered the School in each year during the last fourteen years, and shows how many of them were graduates of colleges; and of the latter, how many were graduates of Harvard and how many of other colleges: —

	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.	1883-84.
Whole number of entries	105	92	87	95	102	119	128	111	102	124	91	97	84	86
Graduates of colleges .	60	56	47	58	55	67	77	79	62	76	60	53	56	61
Harvard graduates . .	19	26	22	29	40	39	47	47	38	59	41	29	33	47
Graduates of other colleges	41	30	25	29	15	28	30	32	24	17	19	24	23	14
Non-graduates	45	36	40	37	47	52	51	32	40	48	31	44	28	25

It is still too soon to speak with confidence of the combined effect upon the School of the examination for admission and the three-years' course. The effect of the former is indeed pretty obvious. On the one hand, it has largely reduced the number of non-graduates entering the School; while, on the other hand, it has not very much affected the quality of those non-graduates who still enter, — that is to say, a large majority of the non-graduates who now enter the School enter as Special Students, without even attempting to pass the examination for admission; and of those who attempt to pass the examination a large portion fail, at least in the first instance. It may be said, therefore, that the chief effect of the examination for admission has been to improve the quality of the School at the expense of its numbers. When the examination was established, the

Faculty was greatly in the dark upon two points: first, what proportion of those entering the School without a degree would be able to pass the examination in languages without any or much special preparation; secondly, to what extent would candidates prepare themselves for the examination as they prepare themselves for admission to college. On neither point has our experience thus far been encouraging. Indeed, a considerable proportion of those who finally pass the examination for admission, enter the School in the first instance as Special Students, and prepare themselves for the admission examination and pass it during the three years that they are in the School; for our present practice enables one to obtain a degree by remaining in the School three full years and passing all the necessary examinations, though he be only a Special Student during a portion — or even during the whole — of the three years.

The extension of the course to three years is supposed chiefly to have affected graduates of colleges; and to what extent and how it has affected them it is difficult to say. It is not clear that it has prevented any considerable number of graduates from entering the School. During the last fourteen years the number of graduates entering the School has not varied greatly in the different years; nor is it clear upon the whole whether the number has increased or diminished. The most important change has consisted in a large increase of Harvard graduates and a corresponding falling off in graduates of other colleges. It is not clear that the latter phenomenon has any connection with the extension of the course; and an obvious explanation of it may be found in the fact that local law-schools have been constantly springing up in different parts of the country. As to Harvard graduates entering the School, they have more than doubled during the last fourteen years. From 1870 to 1879, both inclusive, they increased pretty constantly and regularly, until in the latter year they reached fifty-nine. In the three following years they fell off largely, — namely, to forty-one in 1880, to twenty-nine in 1881, and to thirty-three in 1882. In 1883, however, they increased again to forty-seven; and during the current year fifty-five have entered to this date, being one more than entered up to the corresponding date in 1879. This falling off in Harvard graduates has been an important factor in diminishing the size of the School during the last three or four years; but there is no reason to suppose that the falling off was produced by the lengthening of the course or by any other than accidental causes. It is to be observed that the lengthening of the course took effect in 1877, that up to that time the largest number of Harvard graduates that had entered the School in any year was forty-seven, and that in two years from that

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
	FIRST YEAR.		
Prof. Gray	Real Property. No text-book	2	55
Prof. Keener	Contracts. Langdell's Cases on Contracts	3	58
Prof. Ames	Torts. Ames's Cases on Torts	2	61
Prof. Thayer	Criminal Law and Criminal Procedure. No text-book	1	61
Prof. Ames	Civil Procedure at Common Law. Ames's Cases on Pleading	1	60
	SECOND YEAR.		
	HONOR COURSE.		
	Required Subjects.		
Prof. Thayer	Evidence. No text-book	2	21
Prof. Langdell	Jursdiction and Procedure in Equity. Langdell's Cases in Equity Pleading	2	21
Prof. Gray	Property. No text-book	2	21
Prof. Ames	Trusts. Ames's Cases on Trusts	2	21
	Elective Subjects.		
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	10
Prof. Keener	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	11

THIRD YEAR.

	HONOR COURSE.		
	Required Subjects.		
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction	2	8
Prof. Ames	Partnership and Corporations. Ames's Cases on Partnership	2	8
Prof. Langdell	Suretyship and Mortgage. No text-book	2	8
	Elective Subjects.		
Prof. Gray	Conflict of Laws. No text-book	1*	2
Prof. Thayer	Constitutional Law. No text-book	1†	2
Prof. Thayer	Agency and Carriers. No text-book	1	2
Prof. Gray	Wills and Administration. No text-book	1	7
Prof. Gray	Law of Persons. No text-book	1	7
Prof. Keener	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	3
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	4
	ORDINARY COURSE.		
	Elective Subjects.		
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction	2	15
Prof. Ames	Partnership and Corporations. Ames's Cases on Partnership	2	19
Prof. Langdell	Suretyship and Mortgage. No text-book	2	16
Prof. Gray	Conflict of Laws. No text-book	1*	1
Prof. Thayer	Constitutional Law. No text-book	1†	1
Prof. Thayer	Agency and Carriers. No text-book	1	6
Prof. Gray	Wills and Administration. No text-book	1	11
Prof. Gray	Law of Persons. No text-book	1	14
Prof. Keener	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	4
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	6

* For the first half of the year.

† For the last half of the year.

time the number increased to fifty-nine. A larg
Harvard graduates who enter the School do so
graduating; and hence the size of any given gra
the proportion of the class who intend to study la
have much effect upon the number of Harvard g
the Law School during the following year. On th
fore, the falling off in Harvard graduates in 1880
cannot be attributed to the lengthening of the co
other hand, the increase in Harvard graduates in 1
not be regarded as a recovery from the first effects
of the course.

The great obstacle in the way of the success o
course has been and is, not the difficulty of ind
enter the School, but the difficulty of inducing th
three years. During the seven years extending f
both inclusive, the average length of attendance of
ing the School was a trifle over a year and a th
During the seven years extending from 1877 to 1
(being the period during which the three years c
operation), the average length of attendance has
a year and a half (1.52 years). The latter period
a gain over the former of only one sixth of a ye
length of attendance; nor can this gain all be cre
years' course, for it has in the main been gradual
through the whole period of fourteen years. It n
therefore, that the three years' course has not y
much fruit so far as regards the School as a whol
statement, however, is liable to give an erroneous
the number of students who have remained in th
full years since the three years' course went int
lengthening of the course from two years to three
shorten as well as to lengthen the average attend
have a tendency to shorten the average attendance
in consequence of it, abandoned all idea of getti
that it has had the effect of shortening the average
class of students to some extent there can be no do

It is evident that the success of the three years'
the prosperity of the School generally, is chiefl
graduates of colleges; and of the graduates of coll
School, the Harvard graduates bear a constantly
tion. As to the latter, the time of their entering t
relation to the time of their graduating, is concei
much significance. A residence at the University

much to expect from the average student at best; and it is believed that we cannot as a rule secure so long a residence, except in those cases where it is continuous. In other words, if a student, upon graduating as bachelor of arts, severs his connection with the University and ceases to reside in Cambridge he is, it is believed, very unlikely to return to the University, or, at all events, to the Law School, and complete his seven years of residence. It is of much importance therefore to the Law School, that Harvard graduates should enter it immediately on graduating rather than at some subsequent date. In this respect there has been a great change for the better within the last fifteen years, as will appear from the following table: —

	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.
Size of Graduating Class	129	157	112	131	164	141	136	178	146	189	161	173	177	205	195
Entered the Law School immediately	7	6	10	9	23	28	29	33	20	37	22	14	21	33	36
Entered the Law School to this date	24	31	20	26	34	45	44	52	39	54	42	21	31	45	36

Of course the number of students who will hereafter enter the Law School from College classes which have recently graduated can only be estimated. There is no reason to suppose, however, that the figures in the foregoing table will be materially changed by entries to be made hereafter from College classes which graduated prior to 1880, as Harvard graduates seldom enter the Law school more than five years after graduating.

C. C. LANGDELL, *Dean*.

AUSTIN HALL, Nov. 17, 1884.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — As Dean of the Medical Faculty I have the honor to submit the following report upon the Medical School for the academic year 1883–84: —

During the past year the School has fairly entered upon a new career. The occupation of the new building on Boylston Street has given to the Faculty the opportunity so long desired of arranging its course of instruction in the full possession of all those facilities for work which modern educational methods imperatively demand. With its spacious and well-lighted lecture-rooms and its large and well-appointed laboratories the School is now enabled to arrange to the

best advantage its graded course of systematic i
good results which were anticipated from this exten
tunities for instruction and work have already sho
the increased number of original investigations
made under the auspices of the School, and there
the number will be still further increased as soo
for research which the School offers are fully realiz
community.

The new building was dedicated to its uses with
monies on the 17th of October, 1883, on the 100th
foundation of the School. The interest of the occ
increased by the presentation of a picture of Dr. O
a bust of Dr. H. J. Bigelow, both of which works
the walls of the anatomical lecture-room. A ha
containing the addresses and exercises on this o
printed and widely distributed.

A year's occupation of the building has, as was
led to certain slight changes in details of constru
the same time shown the necessity for more impo
the method of heating and ventilation. What thes
be cannot at present be indicated, but it is believed
serious difficulty in making the building as satisfacto
as it already is in every other.

Though by its removal to the new building the
carried farther from the Massachusetts General
large portion of the clinical teaching is given, it has
been brought into greater proximity to the Bost
where equally important opportunities for instruc
more easily secured. Practically the distance from
not been found to cause any inconvenience, as t
exercises has been so arranged as to render it un
students to go from one part of the city to another
of instruction.

In this connection it should be mentioned that th
greatly benefited by the erection of the new buil
patient department of the Massachusetts General
hospital authorities have granted every facility fo
only by providing spacious new quarters, but also b
patients from all parts of the country. The advant
ality are particularly felt by the instructors in spec
as dermatology, laryngology, &c.

On the removal of the Medical School to its
Dental Faculty asked for and received permission

tion of the old building in North Grove Street for the purposes of the Dental School. Another portion of the building has been used during the past year for giving laboratory instruction in the application of surgical apparatus, and it will doubtless be found that, in extending the course of medical instruction, the proximity of this building to the Massachusetts General Hospital will render it very desirable for many of the exercises of the second and third years.

The amount and character of the regular instruction given to students during the year will be found fully set forth in the appended tables, but in several of the departments considerable work has been done which is not thus reported, but which deserves special mention.

Anatomy. — In this department particular attention has been given by the professor and his assistants to the improvement of the anatomical portion of the Warren Museum. Among the valuable preparations which have thus been added to the collection may be mentioned the following: —

1. Frozen sections mounted so as to be conveniently studied.
2. Thin sections of bone arranged in regular series and showing its minute structure.
3. Corroded wax injections of the blood-vessels of various organs.
4. Fusible metal injections of various organs and cavities of the body.

Physiology. — In this department the time of the instructors has been largely occupied in the arrangement of the new laboratory and in providing facilities for future work. The professor of Physiology and his assistant have, however, continued their investigations on the action of the vaso-motor nerves, a preliminary report of which was published in the "Central-blatt für die medicinischen Wissenschaften," July 21, 1883. A similar study of the vaso-moter nerves, extending the investigation to cold-blooded animals, has also been made during the past year by Dr. F. W. Ellis of Monson. The result of this research will soon be published in the "Journal of Physiology."

It may be proper to mention in this connection that the work done by Dr. Ernst in the culture of bacteria, under the direction of the pathological department, was to a large extent performed in the physiological laboratory on account of the better opportunities for such work which could be there secured. Several of the officers of instruction have also availed themselves of the facilities offered by the laboratory for the prosecution of original research.

Chemistry. — The chemical laboratory has been occupied during the past year by one hundred and fifty-nine regular and five special students. In addition to the regular instruction i try, qualitative analysis, and medical chemistry (chemistry), with special reference to the diagnos renal diseases, and toxicology, special investigation during the year upon the following subjects: —

1. The distribution of arsenic in the body in case that substance. This investigation is still in prog being chiefly obtained from cases of suicide by arse occurring in this city.

2. The sources of domestic arsenical poisoning.

3. The milk and food supply of the State, t obtained from the State Board of Health, Lunacy

4. The water supply of Boston, specimens from t of supply being obtained from the Boston Water Bo

5. The sanitary condition of the public schools o ence to the contamination of the air in the school-ro tigation was made at the request of a special comm inquire into the subject, and the results appear in t presented to the School Board of Lynn, December,

Pathology. — In this department facilities were off and Nelson, candidates for the degree of A.M., w bacteriological investigations. The results of Dr. published in the "American Journal of Medical S ber, 1884, and the theses of both these gentlemen mention on the Commencement programme. Dr. special extra instruction to a class of second-yea the Christmas recess in the methods of examining s culous bacillus. There were also in this depart students in courses of general pathology.

Histology and Embryology. — During the past y secured the advantages of greatly improved labor this department, so that students can now receive t and special instruction. Over thirty persons have of the opportunities thus offered. Of these over year students taking a special course and doing work a week throughout nearly the whole year; students have done special work upon the histology of certain organs; one post-graduate has taken a Histology, and a special investigation on the struc of the ciliary muscle has been made by Dr. Myl J. C. Warren and Dr. S. G. Webber have also us for researches upon which they have been engaged. has published the results of observation on the vesi the guinea-pig in the "Archiv für mikroskopische Anatomie," completed an investigation on the skin of insects, and made considerable progress with a treatise on human embryology. A large amount of material for future work in Histology and Embryology has been collected.

The demand for and the usefulness of a histological laboratory are thus amply demonstrated and it is hoped that means will be found for still further increasing the opportunities offered by the School for this important branch of medical study.

Warren Museum. — No department of the School has profited more by its removal to the new building than the Warren Museum; for the most valuable part of the collection, for which the old building offered no proper security against fire, and which consequently had to be stored for safe keeping in Temple Place, has now been united to the rest, and placed in its proper position upon the shelves. The most important gift to the Museum is that of Dr. J. Collins Warren, who has presented the anatomical collection of his father, the late Dr. J. Mason Warren. Many of the preparations are of historic as well as of professional value.

The Museum has also been enriched by the addition of a number of pathological specimens, as well as by the preparations described in the report on the department of Anatomy. The collection as a whole is in excellent condition, and the present working force is amply sufficient to keep it so.

The only changes of any importance in the course of instruction during the past year were the addition of a course of lectures on Hygiene to the fourth-year students by Dr. Durgin, a course of lectures on the same subject with practical demonstrations to the first-year students by Dr. Harrington, and a laboratory course on the application of bandages and surgical apparatus to the second-year students by Dr. J. C. Warren, assisted by Dr. West. Dr. Durgin's course was supplemented by visits to the Brighton Abattoir, the sewers, and other places of interest in connection with public medicine.

Shortly after the beginning of the academic year the School was called upon to mourn the death of Dr. Calvin Ellis, Professor of Clinical Medicine, and for many years Dean of the Medical Faculty, an indefatigable laborer in the cause of medical education, and one to whose untiring efforts more than to those of any other single individual the School may be said to owe its present high position among the medical schools of the country.

The vacancy thus created in the chair of Clinical Medicine was filled by transferring Dr. R. T. Edes from the chair of Materia Medica.

TABLE I.—SHOWING THE AMOUNT AND CHARACTER OF INSTRUCTION.

COURSES OF INSTRUCTION FOR 1883–84.

Instructors.	Subjects.	Exercises per week.	No. of students examined.
	FIRST CLASS.		
Prof. Dwight	Descriptive Anatomy	Four.	73
Drs. M. H. Richardson, Otis, and Mixter	Practical Anatomy, with Exercises in Dissection	Five, January till May.	
Drs. C. S. Minot and Quincy	Laboratory Exercises in Histology	Two, till May.	
Dr. C. S. Minot	Embryology	Fifteen Lectures.	
Prof. Bowditch	Systematic and Experimental Physiology	Four.	87
Dr. J. W. Warren	Laboratory Exercises in Experimental Physiology	Novemer till May.	
Asst. Prof. Hills	General and Analytical Chemistry	Two, with ten additional Exercises	62
Asst. Prof. Hills, Drs. Emerson and Harrington	Practical Exercises in the Laboratory for General Chemistry	Six.	
Dr. Harrington	Hygiene	Twelve Lectures and twelve Demonstrations.	
	SECOND CLASS.		
Prof. Dwight	Topographical and Advanced Anatomy	One.	67
Drs. M. H. Richardson, Otis, and Mixter	Practical Anatomy with Exercises in Dissection	Five, till May.	
Prof. Wood	Medical and Toxicological Chemistry	Two.	75
Prof. Wood, and Drs. Emerson and Harrington	Practical Exercises in Laboratory for Medical Chemistry	Six.	
Dr. Bolles	Materia Medica, with Practical Demonstrations	One.	78
Prof. Fitz	General Pathology and Pathological Anatomy	Two.	70

SECOND CLASS — CONTINUED.

Prof. Fitz	Special Pathological Anatomy, with Demonstrations	Two.	
Drs. Whitney and Gannett	Laboratory Exercises in Pathological Histology	Two.	
Prof. Fitz and Dr. Gannett	Practical Instruction in Performing Autopsies	Throughout the year.	
Profs. Minot and Edes	Clinical Medicine	Four.	
Drs. Mason, Garland, and Shattuck	Practical Instruction in Auscultation and Percussion	Six, first half-year.	
Asst. Prof. Knight	Practical Diagnosis and Treatment of Diseases of the Larynx	Six, first half-year.	
Asst. Prof. Warren	Recitations in Surgical Pathology and Surgery	One.	
Asst. Prof. Warren and Dr. Bradford	The Application of Bandages and Apparatus	One, second half-year.	
Prof. Cheever	Clinical Surgery	Two, till April.	
Asst. Prof. Porter	Clinical Surgery	Two.	

THIRD CLASS.

Prof. Edes	Therapeutics	Three.	61
Prof. Reynolds	Theory and Practice of Obstetrics	Three.	72
Asst. Prof. W. L. Richardson	Recitations in the Theory and Practice of Obstetrics	One.	
Asst. Prof. W. L. Richardson	Operative Obstetrics	Twelve practical Exercises.	
Asst. Prof. W. L. Richardson	Practical Instruction in Clinical Obstetrics	Throughout the year.	
Prof. Minot and Dr. Whittier	Theory and Practice of Physic	Five.	67
Profs. Minot and Edes	Clinical Medicine	Four.	64
Prof. Cheever	Surgery and Clinical Surgery	Two, first half-year.	65
Prof. Cheever	Clinical Surgery	Two, till April.	59
Asst. Prof. Porter	Surgical Anatomy and Operative Surgery	Twice a week in March and April.	
Asst. Prof. Porter and Dr. Otis	Operative Surgery	Fifteen practical Exercises.	
Prof. Williams	Diseases of the Eye	Two, first half-year.	

COURSES OF INSTRUCTION FOR 1883–84 — CONTINUED.

	THIRD CLASS — CONTINUED.	
Prof. Williams	Clinical Ophthalmology	One, till January and after March.
Prof. White	Diseases of the Skin	One.
Prof. White	Clinical Dermatology	One.
Asst. Prof. Baker	Gynaecology	Two.
Asst. Prof. Baker	Clinical Gynaecology	Two, first half-year.
Dr. Davenport	Clinical Gynaecology	Two, first half-year.
Dr. Greenough	Practical Diagnosis and Treatment of Syphilis	One.
Dr. Green	Practical Diagnosis and Treatment of Diseases of the Ear	One, January till April.
Dr. Blake	Anatomy, Physiology, and Diseases of the Ear	Two, for three months.
Dr. Oliver	Practical Diagnosis and Treatment of Diseases of Children	One, first half-year.
Dr. Rotch	Practical Diagnosis and Treatment of Diseases of Children	One, for six months.
Dr. Webber	Practical Diagnosis and Treatment of Diseases of the Nervous System	One, till February.
Dr. Putnam	Practical Diagnosis and Treatment of Diseases of the Nervous System	One, after January.
Dr. Folsom	Mental Diseases	Eight Lectures.
Dr. Draper	Legal Medicine, with Demonstrations	Twelve Exercises.
	FOURTH CLASS.	
Dr. Draper	Clinical Medicine	One.
Dr. Garland	Clinical Medicine	One.
Dr. Mason	Clinical Medicine	One, for three months.
Asst. Prof. Warren	Clinical Surgery	One, till February.
Asst. Prof. Porter	Clinical Surgery	One, after January.

FOURTH CLASS — CONTINUED.

Asst. Prof. Porter and Dr. Otis	Operative Surgery	Practical Exercises.	9
Dr. Bradford	Orthopedic Surgery	Two, three months.	
Asst. Prof. W. L. Richardson	Clinical Obstetrics	Two, for six months.	9
	Operative Obstetrics	Practical Exercises.	
Prof. Williams	Clinical Ophthalmoscopy	Two, for six months.	
Dr. Wadsworth	Ophthalmoscopy	One, for four months.	9
Prof. White	Dermatology	One.	9
Prof. White	Clinical Dermatology	Three.	
Asst. Prof. Baker and Dr. Davenport	Clinical and Operative Gynaecology	Six.	9
Dr. Chadwick	Clinical Gynaecology	Three.	
Drs. Oliver and Rotch	Diseases of Children	Three.	9
Drs. Putnam and Webber	Diseases of the Nervous System	Two.	9
Asst. Prof. Folsom	Mental Diseases	One.	9
Asst. Prof. Knight	Laryngology	Three, for two months.	9
Dr. Blake	Otology	Two, for three months.	9
Dr. Green	Otology	Two, for three months.	
Dr. Draper	Legal Medicine	One.	9
Dr. Harris	Legal Medicine	Demonstrations.	
Dr. Greenough	Syphilis	Two.	9
Dr. Homans	Ovarian Tumors	Six Lectures; Clinical Exercises.	
Dr. Durgin	Hygiene	Twelve Lectures.	
Boston Cooking School	Cookery		

The whole number of students in attendance

During the year was	259
During the first term	248
During the second term	245

Of these 134 had literary or scientific degrees.

There were 64 applicants for the degree of Doctor of Medicine in the 3 years' course, of whom 14 were rejected.

There were 11 applicants for the degree of Doctor of Medicine in the 4 years' course, of whom 2 were rejected. Of the 9 students who received the degree, two received it *cum laude* and with it the degree of A.M.

The Fourth Class was composed of 12 students, 5 of whom postponed graduation in order to become candidates for Hospital appointments.

The Scholarships were awarded as follows: —

1st Barringer	Scholarship,	E. P. Stone . . .	4th Class.
2d "	"	J. B. Hyland . . .	3d "
Faculty	"	Owen Copp . . .	3d "
"	"	J. H. Gifford . . .	3d "
"	"	E. D. Roe	2d "
"	"	H. F. M. Smith . .	2d "

TABLE II. — SHOWING NUMBER OF TERMS SPENT AT THE SCHOOL BY GRADUATES.

	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.
Spent six terms .	14 47%	25 69%	40 65%	41 85%	62 88%	39 86%	49 81%	79 91%	67 88%	57 96%
Spent five terms .	7 23%	5 1%	9 15%	4 8%	2 2%	1 2%	6 10%	2 2%	4 5%	0
Spent four terms .	6 20%	4 11%	8 14%	3 6%	3 4%	4 8%	4 6%	4 4%	4 5%	2 3%
Spent three terms .	0	2 5%	1 1%	0	2 2%	0	1 1%	0	1 1%	0
Spent two terms .	3 10%	0	3 5%	0	1 1%	1 2%	0	1 1%	0	0
Total graduated .	30	36	61	48	70	45	60	86*	76†	59‡

* Includes nine students of the Fourth Class. † Includes six students of the Fourth Class.
‡ Includes nine students of the Fourth Class.

TABLE III. — STATISTICS OF EXAMINATIONS.

EXAMINATIONS FOR ADMISSION.

			Physics.	Latin.	English.	Elective.	Rejected.
1884.	June	Offered . .	26	27	29	29	4
		Conditioned	6	3	10	3	
	Sept.	Offered . .	19	19	20	19	1
		Conditioned	5	6	4	6	

JUNE EXAMINATIONS.

		First Class.						Second Class.								Third Class.											
		Anatomy.		Physiology.		General Chemistry.		Medical Chemistry.		Materia Medica.		Path. Anatomy.		Topo. Anatomy.		Theory and Practice.		Clinical Medicine.		Surgery.		Clinical Surgery.		Therapeutics.		Obstetrics.	
			Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
1881	Passed	58		42		37		70		69		77				74		67		73		77		82		66	
	Rejected	8	12	19	31	10	21	9	11	15	17	11	12			5	6	16	19	3	3	1	1	8	8	14	17
	Total	66		61		47		79		84		88				79		83		76		78		90		80	
1882	Passed	60		62		38		64		46		54		52		74		82		82		80		64		69	
	Rejected	10	14	13	17	10	20	7	9	15	24	11	16	3	5	9	10	5	5	2	2	3	3	5	7	15	17
	Total	70		75		48		71		61		65		55		83		87		84		83		69		84	
1883	Passed	63		62		53		62		64		62		60		60		58		57		61		69		59	
	Rejected	8	11	12	16	7	12	7	10	11	15	11	15	6	8	5	8	2	3	5	8	0	0	9	11	6	9
	Total	71		74		60		69		75		73		75		65		60		62		61		78		65	
1884	Passed	54		65		46		63		63		56		59		53		58		58		58		55		60	
	Rejected	19	26	22	25	16	25	12	16	10	13	14	20	8	12	14	2	6	9	7	10	1	2	6	10	12	16
	Total	73		87		62		75		73		70		67		67		64		65		59		61		72	

		Fourth Class.																									
		Ophthalmology.		Dermatology.		Gynaecology.		Obstetrics.		Clinical and Operative Obstetrics.		Diseases of Children.		Diseases of Nervous System.		Mental Diseases.		Forensic Medicine.		Otology.		Laryngology.		Syphilis.		Operative Surgery.	
1882	Passed	7		7		7		6		6		7		6		6		7		8		7		7		8	
	Rejected	1	12	0	0	0	0	1	14	1	14	0	0	1	14	1	14	0	0	0	0	0	0	0	0	0	0
	Total	8		7		7		7		7		7		7		7		7		8		7		7		8	
1883	Passed	4		4		5				5		5		3		3		4		5		5		5		9	
	Rejected	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	4		4		5				5		5		3		3		4		5		5		5		9	
1884	Passed	8		8		8				8		9		7		9		9		8		8		9		8	
	Rejected	1	11	1	11	1	11			1	11	0	0	2	22	0	0	0	0	1	11	1	11	0	0	1	11
	Total	9		9		9				9		9		9		9		9		9		9		9		9	

In view of the generous response which has just community to the appeal of the School for the sup wants, it may seem ungracious to insist further needs; but it should be constantly borne in mind the School that the high standard which has b always cause the classes to be smaller and conse be higher than in the other principal schools of th is no doubt that excellent students are often dete expense from entering the Harvard Medical Sch service could be rendered to the cause of medical providing endowments for the professorships, whic School to reduce its fees and thus extend more tunities which it offers for systematic training in

The usual tables of statistics relating to the Sc above.

H. P. B

To the President of the University: —

Sir, — I have the honor of presenting my rep School for the year just past: —

Compelled to evacuate the quarters in the Mass Hospital which we had occupied since the est School, we petitioned the Faculty of the Medical of a portion of their abandoned building in N and our petition was generously granted. At co of time and money the necessary alterations wer December the rooms have been occupied for our chanical departments with great satisfaction. dents have as usual attended the lectures of the the Medical School, including dissecting, and wit annual examinations. Out of thirteen students passed in all branches, six failed in one, and two f second-year students went up for examination, o to pass. The number of graduates was ten, — failures of last year's graduating class, and one last.

The second-year students attended as usual the Pathology of Dr. J. Collins Warren of the Medic lectures on Oral Surgery and Anaesthetics, being a gical lectures of Dr. Cheever, Professor of Surgery partment they studied besides: Dental Therapeutic Materia Medica with Dr. Briggs, and Oral Pathol

Warren. Each of these gentlemen lectured one hour each week throughout the year. The Operative department, besides the regular clinical instruction by the corps of faithful and intelligent clinical teachers, occupying the whole of every afternoon during the year, also had one lecture each week by its Professor, Dr. Thomas Fillebrown. The Professor of Mechanical Dentistry also gave one lecture each week throughout the year, and one hour or more to the clinical work in the Laboratory. Dr. Grant, the efficient and faithful Demonstrator in the Mechanical department, attended during the mornings of five days in the week, stimulating the students by his own interest in the work, and aiding them by his instruction when help was needed. At the close of the year he felt compelled by the pressure of his private business to resign the position held so many years with such credit to himself and advantage to the School.

Dr. Pond, the able Demonstrator in the Operative department, and four of the clinical instructors who had been connected with the School for terms varying from eight to two years, also — and for the same reason — resigned their positions, depriving the School of an efficient and earnest corps of workers and necessitating an almost entire change in the clinical board.

It seems useless to again call attention to the pecuniary needs of the School, which has absolutely nothing to depend upon but the fees of the students, and which from its impecuniosity is compelled year after year to lose invaluable instructors, — its oldest and most experienced, — who can no longer afford to give to the School the time demanded by their practice.

THOMAS H. CHANDLER, *Dean*.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I have the honor to submit the following report upon the Lawrence Scientific School for the academic year 1883–84: —

The number of students registered during the year was twenty-six. They were classified as follows: —

I.	Engineering	8
II.	Chemistry	1
III.	Natural History	4
IV.	Mathematics	0
	Special Courses	13
	Total	26

These students attended the exercises of thirty-four different instructors. The whole number of courses taken, prescribed and elective, was one hundred and twenty-five; an average of nearly five to each pupil. The distribution of studies is shown by the following statement: —

Chemistry	11	Mechanical Drawing	9
English	5	Music	1
Fine Arts	7	Natural History	30
French	5	Philosophy	7
German	10	Political Economy	2
History	1	Physics	10
Mathematics	11	Spanish	2
Mechanics	5	Surveying	2
			125

Two persons received degrees at Commencement, — one in Engineering and one in Natural History.

H. L. EUSTIS, *Dean*.

To the President of the University:

Sir, — I respectfully submit the following report upon the Bussey Institution for the year 1883–84: —

Five students were registered in the course of the year, of whom two were in regular standing, while three devoted themselves particularly to Horticulture. It is eight years since so small a number of students have presented themselves, and eleven years since the number of students was less than five. In explanation of this falling off it may be urged as probably true that the establishment of a Veterinary School in the University may have attracted to that department two or three students specially interested in animals who, in the absence of other opportunities, would naturally have followed the courses in Anatomy and Zoölogy which are given at the Bussey Institution, as had been the habit of such students in previous years. It is not impossible moreover that the establishment by the State of Massachusetts of eighty free scholarships in the school at Amherst, which were abundantly advertised in the summer of 1883, may have had some slight tendency to hinder students from seeking instruction at the Bussey Institution.

Throughout the year instruction was given in Agriculture by Mr. Motley; in Horticulture by Mr. Watson; in Botany by Mr. Faxon; in Anatomy by Dr. Harrison and Dr. C. A. Cheever; and in Agricultural Chemistry by Professor Storer. For a short time, at the beginning of the year, Mr. Hinckley acted as Demonstrator in the dissecting-room until relieved by the appointment of Dr. Cheever to that position. The ordinary work of the Farm should be mentioned also as a valuable means of instruction. Not only do city-bred students find their advantage in watching the various operations of agriculture and occasionally lending a hand for the furtherance of them, but to many a country lad the methodical conduct of a kitchen garden is of the nature of a revelation. In this sense the ability to keep at the Farm young men desirous of agricultural instruction who are willing to work there in payment of their board is a distinct gain for the Institution in that it extends legitimately its power for doing good.

Beside the Bussey students proper, as above stated, the students and instructors of the Veterinary department occupied the stone building during afternoons as "guests" throughout the year, with the result not only that the running expenses of the establishment for fuel and service were largely increased, but that the building suffered more through wear and tear than it had during the previous twelve years of normal occupancy.

The superintendent of the Farm, Mr. Hinckley, with his workmen was fully occupied during the winter in caring for some seventy animals that were boarded for longer or shorter periods, varying from a week or two to five months, and in securing fire-wood from the outlying wood-lots to be disposed of to the students at Cambridge through the agency of the Harvard Coöperative Society. A considerable quantity of manure was hauled from the Veterinary Hospital in Boston and, together with a still larger quantity made at the Farm, was employed for the production of carrots and other roots to be disposed of to the Veterinary department for use in its Hospital; as well as potatoes, beans, and squashes to be consumed at the Memorial Hall in Cambridge. The first step was thus taken towards the much-needed recuperation of the Farm.

A careful consideration of the income and expenses of the Farm thus far gives promise that this particular branch of the Institution may soon be able to support itself. Many expenses were necessarily incurred in the beginning for fittings and equipment, which are not likely to be soon repeated. The fact that the fiscal year of the University (September to September) differs completely from the natural agricultural periods of seed-time and harvest puts the statement of Farm accounts at a disadvantage, in that the record of Farm income and expenses submitted to the Treasurer of the University at the end of August does not give the least indication of the great store of agricultural products which have been harvested during the year and which were actually at that time safely stored for use during the succeeding autumn and winter. Eighty tons of hay and as many cords of wood, to say nothing of some scattering bushels of roots and tubers, naturally represent a money value of considerable importance.

The Institution was indebted to the late Mrs.
Boston for the gift of a horse which has proved its
ful and well adapted for work upon the Farm;
Cheever of Wrentham for several volumes of agricu
The Hon. Ambrose A. Ranney, M.C., has again
tion a large number of seeds from the Department
Washington to be distributed among students an
School and other trustworthy persons.

F. H.

To the President of the University:

Sir, — I beg to submit herewith the second an
School of Veterinary Medicine:—

In accordance with the plan already decided upon
ment of the course of study in the School, the s
year, viz. Anatomy, Physiology, Chemistry, and
year been augmented by the addition of those
Practice of Veterinary Medicine and Surgery,
and Pathological Anatomy, which, with their va
and with daily exercises in Practical Anatomy,
for the second year of the proposed three-years' co

Of the nine students which composed the class
went up for examination, four passed successfully,
subject each, and one in two. Those who fail to
subjects are not allowed to go on with their class.

Twelve candidates presented themselves for the
tions. Of these, nine were accepted for the firs
second class. There are also four Special Studen
of the first and two in subjects of the second yea
twenty-three students, seven of whom are gradu
or members of a profession.

The resignation of Dr. Whitney from the pos
Histology in the School was accepted, and Mr. Fr
appointed to fill the vacancy. Mr. Dexter come
qualified for the position, having been for some tim
Whitney who, it may be said, still retains his co
School as Instructor in Parasitic Diseases.

Dr. Harrison, whose first appointment as Instr
terminated with the end of the academic year, w
three years, — which gives him a place in the Facu

The resignation of Mr. Faxon from the positio
Botany at the Bussey Institution, at whose cha

students were taught Botany last year, created another vacancy in our teaching staff, to which Mr. Hollis Webster was appointed, and he now holds the position of Instructor in Botany in the School.

A further addition to the teaching staff of the School has been the establishment of two Demonstratorships in Anatomy. The appointments are to be made annually from the second-years' students for merit after competitive examination.

In future the subjects of General Chemistry and Physiology of the first, and Medical Chemistry and Pathological Anatomy of the second year, will be given at the Medical School; all other exercises, including Practical Anatomy, will be held at Village St. instead of at the Bussey Institution as heretofore.

The Veterinary Hospital. — From the 27th of September, 1883, at which time the figures for the last report were taken, until the 31st of October of the present year, there have been treated at the Hospital 1462 patients. Of these, 673 were "out-door clinics"; 99 were sent to the Farm buildings at the Bussey Institution, and 690 were in-door patients at the Village St. building. Of these last, 476 were horses, 189 dogs, 10 cattle, 14 cats, and 1 squirrel. Besides this a considerable number of horses have been shod in the Forge to which the attention of one or the other of the Veterinary officers has been given, and of which no record has been kept; and numbers of in-door patients have received treatment, while in Hospital, for more than one ailment, — but have not been counted for more than one in making up the total. The Hospital, as a rule, has been full and at certain times it has been necessary to refuse admittance to applicants because of lack of room for their proper accommodation. The building has proved itself to be all that was hoped for it; good light and air are furnished in abundance, and its various appointments are convenient and well adapted for their purpose.

New Building. — Because of the very great amount of time consumed in going to and from the Bussey Institution it became evident, during one year's experience with students, that if it was desired to give them the full advantage of the course, room must be provided in the city wherein they could receive such instruction as they were then getting at Forest Hills. For this purpose it was decided, after mature consideration, to buy a dwelling-house on Lucas St. adjoining the Hospital building, to take it down and to erect upon the land a building which should give a small but very much needed addition to the Hospital, as well as the further necessary accommodation for the School. This building, although parts of it have already been occupied, is just (Dec. 31) at the point of completion. It contains on the lower floor a stable capable of accommodating 10 horses, connected

through a short passage with the main Hospital
this stable there is a lecture-room, an anatom
reading-room and library, a room for the muse
surgeon's bed-room.

Museum. — By the kindness of friends many ve
of anatomical and pathological interest have been r
past year which, together with similar objects grad
already promise a collection which will very ma
instruction.

Library. — This embraces as yet but few volu
has been until now no place in which such boo
Large additions, however, are promised and no d
tity of books of reference will before long be at t
students.

Finances. — Under the arrangements as they h
the past year the School has managed to be self
little more. That is, from its *earned* income from
been able to pay all charges of whatever nature
ing the 6% interest and taxes on the Hospital
salaries of the instructors. The growing dema
have made necessary a further expenditure for bu
$10,000 and $11,000, the interest upon which at 6
further charges for salaries of additional instructo
must, as matters now stand, be a further charge
The hope and belief is that the additional space g
increase the Hospital earnings by the desired a
should be found possible to obtain by subscription
the buildings could be bought and given to the Col
ing the amount of annual expenditure by the s
terest and taxes, the relief to your Veterinary of
respects the advantages to your Veterinary Sch
great.

Bussey Farm. — The arrangements under which
sent from the Hospital to the Bussey Farm and t
them while there have been found to be quite s
great advantage to convalescent patients.

CHARLES P. L

To the President of the University:

Sir, — Three numbers of the *Bulletin of Harva*
been issued under the immediate charge of the Li
past year, and the cost of them has been shared i

kind friends who have been helpful in this respect in former years. These are Messrs. Charles P. Curtis, William B. Weeden, Henry Lee, Alexander Agassiz, and Charles S. Sargent. Of the *Bibliographical Contributions*, also issued separately by the Library, two — *The Bibliography of Ptolemy's Geography*, by the Librarian, and *A Classified Index to the Maps in Petermann's Geographische Mittheilungen* (1855–1881), by Richard Bliss — have been completed. There has been an unusual demand for these from Europe, particularly from the public cartographical bureaus and from geographical societies. Another contribution, *The Kohl Collection of Early Maps*, is still in progress.

A very valuable portion of the Ebeling collection, which came to the Library by the gift of Col. Thorndike in 1818, consisted of a large number of maps. A brief title-catalogue of them was printed in 1831, and a marked copy of this catalogue has been till recently the guide to the maps as they existed in the folds in which they were received. I referred in an earlier report to a new arrangement in portfolios of that portion of the map collection of the Library which pertains to the American continent. During the past year Mr. Henry C. Badger has had charge of completing the rearrangement of the collection as covering both hemispheres.

The entire series of maps, excluding atlases but including a mass of charts, will occupy at least 900 portfolios, of which about 360 pertain to America, counting in this latter number 72 which hold maps of the Coast Survey. The bulk of the collection is of the Ebeling gift, but the proportion of other maps is larger in the American part than in the rest. It embraces many atlases of which the maps have been heretofore in some cases kept folded together, and in other cases were separated and classed by their geographical relations. These scattered parts have now been brought together and over 50 of these atlases have been strongly bound. Some of them were found to be too incomplete to bind. Maps illustrating certain geographical questions have also been classed together for binding, and perhaps another 50 volumes can be bound the coming year. Taking out these bound volumes — about 100 in number — there still remain probably about 15,000 loose maps which occupy the 900 portfolios already mentioned.

During the interval since the Ebeling portion of the entire collection was catalogued in 1831 the maps have been but little used. From a tally made in 1836 it was found that several maps were then missing which are now in place. Losses since that time seem to be few. These portfolios have been placed in twenty-one cases of slides, four new cases having been added to the seventeen in use before. The portfolios rarely hold over twenty maps, usually about fifteen.

The maps in the main belong to the 17th and 18th centuries, and were collected previous to 1817, when Ebeling died.

The rearranging will be completed early in the coming year. Meanwhile considerable progress has been made in a descriptive catalogue, written on slips, which are kept in drawers near the cases of portfolios. These entries have been completed for the maps of Great Britain, France, Spain, Italy, and Scandinavia. When this catalogue is finished, an historical and topographical index is proposed. The maps in atlases will be eventually included, and perhaps important maps in geographical serials and other books. With this extent of catalogue and index service it is not probable that questions of historical geography can be settled so well anywhere in this country as in this Library.

The accessions to the University Library for the year, and the present extent of the various departments, are as follows: —

Departments.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) .	9,879	220,341	215,097
Law School	1,028	20,952	2,890
Scientific School	37	2,465	. . .
Divinity School	203	17,286	2,271
Medical School	. .	2,078	. . .
Museum of Zoölogy	565	16,379	10,275
Astronomical Observatory . .	163	3,233	5,931
Botanic Garden	160	4,482	2,928
Bussey Institution	150	2,627	855
Peabody Museum	175	867	1,003
Totals	12,360	290,710	241,250

The figures of last year are given for the Medical School, the changes in that department rendering an accurate account for this year impossible.

The Whitney Library of Geology, a component part of the collection in the Museum of Zoölogy, is not yet included in the count of the Museum Library.

Of the accessions to the Gore Hall collection, there were added by gift 1,600 volumes and 7,972 pamphlets; and such accessions also include 507 volumes of bound serials (received in parts), and 518 volumes, made by binding pamphlets.

The accessions of recent years to the University Library have been reported as follows: —

In 1878	9,933 vols.	In 1882	9,192 vols.
" 1879	10,389 "	" 1883	9,818 "
" 1880	7,247 "	" 1884	12,360 "
" 1881	9,804 "		

It will thus be seen that the accessions of the past year have been considerably in excess of those of any previous year since the College Library, with those of the departments, has been made to constitute what is known as the University Library.

The following tables show the use of books at Gore Hall in 1883–84 as compared with previous years: —

	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.
1. Books lent out	41,296	41,986	45,481	48,194	48,231	48,655
2. Used in the building	10,921	7,812	11,724	10,498	8,654	9,047
3. Overnight use of reserved books	7,519	10,506	11,872	12,891	12,678	11,399
Total (excluding No. 3, which is included in No. 1)	52,217	49,798	57,205	58,692	56,885	57,702
Officers of instruction reserving books	. .	35	38	41	44	48
Number of books reserved	. .	3,330	3,418	4,251	4,316	4,782

Owing to the large number of books on the reserved shelves, and the increased difficulty in finding them, it was found to be for the convenience of students to make a special card-catalogue of reserved books and to place it in the reading-room.

SUNDAY USE.

	1880–81.	1881–82.	1882–83.	1883–84.
Number of Sundays open	37	36	36	36
Persons using	1,846	2,067	2,268	2,448
Average	46	57	63	68
Highest number	64	91	92	95

It will also be seen by the following tables that the use of "Admission Cards," by which students have access for investigation to special classes of the books at the shelves, is steadily gaining in favor, judging from the increased frequency of such use: —

ADMISSION–CARDS.

	1879–80.	1880–81.	1881–8
History	. .	31	49
Science	. .	14	26
Art (including Music)	. .	12	22
Literature	. .	12	36
Classics	. .	5	49
Philosophy	. .	5	6
Theology	. .	4	4
Political Economy	. .	2	8
Total students	60	85	200
Times of use	340	870	2,542

There was no record of the classification of use
first year of trial of the system.

The use of the Library by the members of the s
is also increasing. A pass-book containing titles c
is sent by a messenger to Gore Hall twice a day.
thus presented have all the defects of inexactne
which comes from inexperience in using titles, a
upon the Library attendants to attach shelf-number
ing the books there is a considerable expenditu
Library's part in aid of that institution. The ove
"Annex" of books which have been reserved for
our own students is confined to such titles as at th
not been required to supply the latter. That thi
necessary appears from the fact that five-eighths c
by the "Annex" are from the "reserved" shelves
total issues to them being of this class, while of th
a large part have apparently no relation to their s
belong to the class of general reading.

Mr. Kiernan has drawn from our records the foll
statement of the use of our books now, five years a
ago, by the same classes of borrowers. The colum
No." shows the number of students in each depa
spective dates. The class of "Resident Graduates
those so called, unmatriculated students and tho
higher degree. The figures are confined to those c
University whose members live in Cambridge and
Library is considerable.

The result is this: Nine years ago 57% of the students, five years ago 77%, and during the past year 84% used the Library. It is to be hoped a still larger proportion may hereafter be shown; but I have no confidence that any considerable increase upon these figures can be produced till a remodelling of the old part of the building renders the administrative service of the Library more effective not only by day but also in the evening.

STUDENTS' USE OF THE LIBRARY.

Students of	1874-75. Whole No.	1874-75. No. taking books.	1879-80. Whole No.	1879-80. No. taking books.	1883-84. Whole No.	1883-84. No. taking books.
Divinity	20	16	23	23	21	21
Law	139	63	165	119	146	118
Scientific	29	21	16	15	26	17
Resident Graduates	55	18	66	40	68	51
Senior Class	152	109	171	151	209	188
Junior Class	159	96	201	168	195	171
Sophomore Class	208	124	196	163	248	210
Freshman Class	197	108	245	160	253	202
Totals	959	555	1083	839	1166	978

The percentage of users among the undergraduates has risen during the same time, as follows: —

	1874-75.	1879-80.	1883-84.
For Seniors	71	88	90
For Juniors	60	83	88
For Sophomores	59	83	85
For Freshmen	54	65	80

These statements do not cover the use of "reserved books" — a system not in use in 1874-75, — a considerable number of the users of which never take other books from the Library.

The work of the catalogue department is indicated by the following table which has been furnished by Mr. Lane: —

	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.
1. Cards put into the Public Catalogue	36,390	35,315	41,215	34,168	29,480	40,542
2. Cards prepared	20,595	24,887	25,705	18,235	17,015	21,524
3. Volumes received during the year	. .	. .	7,873	6,848	8,441	9,879
4. Pamphlets received during the year	. .	. .	. .	4,469	7,650	8,782
5. Volumes (old and new) catalogued	. .	. .	. .	4,271	6,222	8,566
6. Pamphlets (old and new) catalogued	. .	. .	. .	1,363	1,333	1,121
7. Volumes catalogued for Departments, etc. . .	. .	. .	. .	1,354	1,659	1,825

Referring to the figures under No. 1 it is necessary to explain that over 10,000 of these cards have been put into the drawers not for the first time; but are in fact a returning to the drawers of that number which had been taken out for rectification on account of the receipt of successive parts of serials. The order-files show slips for 1,422 titles of "continuations," as they are technically called, or books issued in parts, including collections, transactions, proceedings and the like; and the corresponding cards for each of which have to be taken out and rectified, almost always two for each one — and it may be as many as twenty — at intervals during a year. In addition to these there are very many sets of public documents and publications of institutions, which come regularly by gift, the cards for which are similarly withdrawn and restored many fimes during the year.

Of the 21,524 cards mentioned under No. 2 there were 2,356 author-cards which had no corresponding subject-cards, thus dividing the catalogue work into "full work" and "short work," — the latter system having been temporarily applied this year to such titles as are of little present interest, in order to bring as rapidly as possible into the authors' catalogue large arrears of titles which in the insufficiency of the staff it seemed impossible to embody in the catalogue, if they were done in the "full work" style. This "short work" has been applied for some years to the work of the Department libraries as included in our official catalogue.

Considerable work has been done in the revision of the subject-catalogue, preparatory to printing an index to it; and some of the changes have been fundamental — all in the pursuit of a more perspicuous method. Mr. Lane's opinion is strengthening, as the work goes on, that the cards of books concerning authors should be put in the authors' catalogue in connection with the cards representing their works, as is done in the classes of Latin and Greek authors, and that these last, now in the subject catalogue, should be transferred to their proper alphabetical place in the authors' catalogue. The impediment to making this change at present is the insufficiency of the number of drawers in the case given to the authors' catalogue. The cases which hold the drawers are fast becoming inadequate. One year's cards closely pressed as they stand on edge measure from 20 to 25 feet; and they would fill a dozen drawers of double rows. This rate of increase signifies an extent of the catalogue in the near future very much beyond the present capacity of the space devoted to the cases; and as now constructed the cases are built on a plan which sacrifices ease of consultation to increasing the capacity.

Mr. Frank Carney, who under Mr. Lane has charge of the shelves, reports that 13,556 volumes have been permanently placed in the new stack since the last report, making 86,929 so placed out of the 220,000 volumes constituting the Gore Hall collection. During the year the Greek authors and attendant literature have been arranged, making 5,488 volumes, as well as the Latin collection of 3,980 volumes. These, with 4,088 other volumes added to classifications already permanently arranged, make up the 13,556 volumes named above. There are various classifications intended ultimately for this stack, which have not been arranged and cannot well be touched till the old part of the building is remodelled so as to receive the books now occupying the prospective places of these unarranged books.

Current accessions, which are ultimately intended for new classifications, are now kept separate in rough divisionary assortments. These now number over 12,000 titles, and all have accrued since the new classification began. They represent, I presume, about 20,000 volumes.

We are already beginning to feel at some points, in the temporary provision which is making for books, that the further extension of the stack eastward cannot long be put off. The remodelling of the old portion of the building is at present more imperatively demanded. Plans for the satisfactory readjustment of its parts were made by Mr. Van Brunt during the early part of the year; but the estimated cost of carrying out the plan proved too great for the present resources of the Corporation.

An examination of the records of the ordering department, carefully kept by Mr. Tillinghast, the head of that department, indicates the rapid increase of its work. While our annual appropriation for the purchase of books is far from as much again as it was four years ago, the amount in money-value of the orders submitted to this department is nearly two and a half times as great now as then. This would be embarrassing except from the fact that about two thirds of any year's orders are not filled within that year; and as these unfilled orders are carried forward successively to the new year's account, the amount of outstanding orders grows year by year, with a diminishing proportion of those ever likely to be filled. The mass will become in time so unwieldly as to invite some searching process for eliminating those titles whose continuance on our lists is useless.

This department has now on hand in its several files about 9,000 slips, one third of which (3,003) represent titles which our agents in this country and in Europe are seeking for; 1,422 constitute standing orders for serial publications (not proper periodicals) of which we have received the parts already published; about 4,000 are slips which for one reason or another have been cancelled, but are preserved for certain bibliographical records which they contain. The rest (nearly 2,000 in number) represent orders not yet acted on because undergoing revision, or lacking approval, or because they have been deferred for prudential reasons.

In March, 1884, a change was made in the process of ordering. Previously orders for a given agent were suffered to accumulate to be despatched in large lots in succession to the different agents. The change referred to produced daily sendings or nearly so, and the orders went in smaller lots, many on postal cards. During the seven months which followed (March to September) nearly 4,100 titles were submitted to the department for verification. Of these over 700 were found to be already in the Library; so that in one case out of six the department is called upon to spend on the titles time which there was means of saving. During these seven months the orders absolutely sent were nearly 2,500 in number, or about 350 a month. At the end of September over 300 titles had accumulated within a short space, which needed more verification than could be given them before the statistical year ended. This makes about 3,500 titles which had been carefully examined in the seven months, while the other 600 titles had passed into the deferred files or had been taken out, for one reason or another, of the regular channel. When it is considered that every regular order passes through twenty-two stages, devised as a protection against error, and when one of these stages involves an examination of from ten to seventeen alphabetical records, it can be judged how intricate and devious the work, necessary in a large library dealing with titles of all kinds in all languages, has become to insure the avoidance of errors. If there were no tricks or devices of authors and publishers to confound titles, no possible variations in names and catalogue entries, and no lack of bibliographical knowledge in the slips submitted to the department, and if there was also unfailing ingenuity in our own officers to solve all questions, — there could be great simplifying of processes and but a few errors would occur; but with frailties of all sorts on all sides the best work which we can do is but approximately accurate and is protective in the same degree.

We received during the year from our foreign agents 28 boxes containing 5,505 volumes, and to these must be added a few books which came by mail. Dividing these importations among our agents, we received from Germany 38%, from England 29%, from France 23%, from Scandinavia 6%, and from Italy 4%. This proportion, however, does not accurately represent the proportions of the languages of those countries in our foreign purchases. We get through England many books in the Iberian, Eastern, and in other less-common languages, which serve to make English seem to be more in demand than French, while the truth is probably otherwise. The Classics come for the most part from Germany, as do the Slavic books, so that the lead given to German is excessive as a record of books in that language, though as I believe German is still the language of the largest class of our accessions as they came from foreign agents. If we add books purchased in America, — only 355 volumes for the year, — of which nearly all are in English, the books in our vernacular of all classes will probably, especially if gifts be added which are almost wholly in English, stand equal to those in German in number, if they do not exceed them.

Not counting continuations of serials we sent to our foreign agents 4,746 orders (works) during the year, and of these 3,931 were received by the agent in time to have the work ordered returned to us in the same year if procurable promptly. Of this 3,931 orders 2,307, or not two thirds, were answered during the year; and if to these, 981 works are added which came during this year in response to older orders, there were 3,288 foreign orders filled during the year. The Scandinavian agent, Lynge of Copenhapen, filled 87% of the orders which he received, and this is the largest proportion of the seven regular agents in foreign countries. From Loescher, the Italian agent, we received nothing owing to the disappearance of a box which was despatched by him, and his proportion cannot be shown; but Reinwald, the French agent, sent only 24% of his orders, — a fault, I fear, common to all French agents, for the book trade does not seem to be organized in that country in a way to insure despatch in the filling of the kind of orders which we send. Friedländer (Berlin) in his restricted line sent 80% of his orders. Of Harrassowitz's (Leipzig) more general orders 64% came. Of Trübner's (London) 78% came. Orders for the rarer and more difficult books of all kinds were sent to Quaritch (London), and 45% of his orders came. About one half of our orders were to our regular German agent Harrassowitz; to Trübner less than a quarter; and to the others in smaller proportions. As to the rapidity with which these orders were filled I find from Mr. Tillinghast's records that when they were filled at all within the year 30% came within three months, 78% within six months, leaving 22% which took from ten to twelve months. These figures pertain to the three principal foreign agents, — Trübner, Harrassowitz, and Reinwald.

The ordering department has also charge of the receiving of the gifts of miscellaneous books to the Library. They average a month about 75 volumes and something short of 1,000 pamphlets. At least a third of these titles prove duplicate, and about a quarter of the pamphlets which are retained prove of interest enough for one reason or another to be prepared at once for the shelves.

When a library becomes large, and particularly if it has a character to sustain, and is under some necessity of securing for posterity the books which investigators deem to be cardinal — at a time when they can be purchased at less prices than they are likely to command in the future, — it watches with some concern the lifting of the commercial value of such books in spite of the depressing influence of business gloom. I do not remember when this has been observable in so great a degree as within the last year or two. In England there have been such extraordinary sales as the Hamilton, which produced £170,000 in a sale of forty days' continuance; the Sunderland, with an aggregate not much short of £50,000; the Gosford of £9,000; and several other sales of significance, though of more restricted range, like the Laing and Collier libraries. In France sales particularly interesting to Americans have included such as the Dr. Court collection — a remarkable gathering of rarities; and those of Pinart and the Abbé Brasseur de Bourbourg. In America the library of the late Henry C. Murphy produced a competition to enhance prices which was only equalled at some other sales in which an artificial competition was devised to the detriment of the public, as in the case of the Brinley and Cooke collections.

This scattering of important private libraries makes good the aphorism of the late Thomas Watt, so long the useful mentor of the great library of the British Museum, that the use of private collections was to feed the great public ones. This definition was in large part intended to characterize the engulfing by the large public or semi-public libraries of private collections bequeathed or purchased for presentation, in order that the value attaching to their completeness might not be lost by a public sale. Still, the uncontrolled dispersal of great and particularly of ancestral collections gathered through successive generations, is not a small advantage to public collections, particularly when with their increased resources they seek to supply the deficiencies left in their early years of small things. In the vicissitudes of families, and in the decay of that taste which values books, some of the splendid ancestral libraries — of England particularly — fall occasionally into hands which can without a regret, and may with public advantage, dispose of them so that the interests of learning and of expectant libraries can be advanced. When several years ago it came in my way to inspect the great library at Blenheim, and the pungent odor from the cases told of the devastation which was going on, I felt that a sale which could be sure to place a large part of its rare and important books where scholars could use them, would not diminish the credit which belonged to its possessor and might benefit the world of letters. There seem to be, so far as I can learn, few such libraries forming in England now among the landed families, the most conspicuous new libraries being in the houses of the successful men of business, as is the case with the splendid collection formed by the late Henry Huth. I fear that the old collections of the county families are now not much increased. Such I think to be the case with the peerless collection at Althorpe, whose splendor is associated with the somewhat unworthy name of Dibdin. The Mudie system of book distribution throughout England has conduced largely to allay the thirst for acquisition in such quarters, while political employment weakens the taste for it in many of the present representatives of such families.

Our American interest in these English private collections is a necessary one, since they are the sources from which, as our public libraries approach completion, we must to a considerable degree draw those books which are both scarce and important. Once passed into a public collection, a book is usually beyond future acquisition. Some of the greater libraries, like the British Museum, have ceased to make sale of duplicates, — having had some unfortunate experience in buying back at much increased cost books which they had sold as supposed duplicates.

If prices for the class of books which I have mentioned are steadily increasing, it is doubtless due more to competition from the United States than to any other cause and a leading American library is at present likely to find itself at foreign sales competing with its near neighbors.

The Library still continues to have charge of the issue of the weekly *Calendar* of the University.

JUSTIN WINSOR, *Librarian.*

Gore Hall, Nov. 15, 1884.

To the President of the University:

Sir, — As Director of the Herbarium I haye the honor to report upon the condition of this establishment as follows: —

From the memoranda kept by the Curator it appears that during the academic year closing on the 31st of August, 1884, 10,090 sheets of specimens have been selected, poisoned, mounted, and distributed into their places in the Herbarium; the greater part after more or less critical examination. Those belonging to the flora of North America have been principally received from our correspondents in various parts of the country. Those from the Old World were chiefly from the Joad Collection, a generous present from the Royal Gardens at Kew, of which an account was given in my report of the preceding year. This collection has yielded to our Herbarium about 8,000 sheets of specimens. We have received, but not yet added to the Herbarium, the first four parts of the *Flora Exsiccata* of Austria and Hungary, edited by Professor Kerner, containing 800 species in beautifully prepared and critically determined species. For these, and for the promise of the remaining portions of this very valuable distribution, we are indebted to the thoughtful intervention of Professor Goodale when in Vienna four years ago.

The library has been increased by 160 volumes and 44 pamphlets (besides those which have been collected and bound into volumes during the year), not counting parts of works belonging to uncompleted volumes. About half of these are gifts from the Director, of publications received by him from the authors.

The publications of the past year which represent the botanical investigations of the Director and of the Curator are partly published in two papers in the "Proceedings of the American Academy of Arts and Sciences," and in the second part of the "Synoptical Flora of North America" (comprising the vast order of Compositæ and some smaller orders), which was issued in August last. The chances of the completion of this national work would be much increased if the pecuniary means of the Herbarium were even temporarily augmented, so that an assistant could be employed and the powers of the Curator, Mr. Watson, be more directly utilized to this end. But even for the Curator's small salary we are mainly indebted, for the past as well as for the preceding year, to a gift of $1000 from the Trustees of the Society for the Promotion of Agriculture.

ASA GRAY, *Director.*

To the President of the University:

Sir, — As Director of the Botanic Garden I have the honor to submit the following report for the academic year 1883–84: —

Owing to the favorable weather of the spring and summer it has been possible to complete most of the changes proposed in my last report. The orders of polypetalous plants formerly cultivated under disadvantage from too great exposure, in the ground next to Raymond St., have been transferred to better soil near the main path, where they have become well established. The land left clear by their removal has been devoted to groups of shrubs and small trees which have long been needed for illustration. This addition to our small Fruticetum nearly completes the screen on the east and south sides of the Garden, and in the shelter of this shrubbery it has been found practicable to cultivate some herbaceous perennials in large quantities for class use.

All the plots devoted to the illustration of the morphology of stems, branches, inflorescence, and types of flowers have attracted much attention from teachers and pupils of botany. The plants have thrived so well and the groups have been so useful to large numbers of persons, that some increase in the size of the plots for the next season is in contemplation. The climbing plants (illustrating Darwin's work on the subject) have been given more space than heretofore and have been extensively employed for study by our own and by other students.

The large collection of vegetables illustrating variation in domesticated plants has been of considerable use in class-work and it seems best to widen the range of selection for the coming year. In compliance with requests from visitors a portion of this plot was given up to the numerous salad-plants which are well known abroad, but which have been but little grown in this country. It is thought that the number of these can be profitably increased next year.

The nursery has yielded enough plants of good vigor to repair nearly all the losses caused by drought in the last few years. With another summer as good as the last we hope to make good all the losses. The nursery has furnished also a large supply of plants for the improvements in the land behind the greenhouses. The changes in the open land have all been made at a cost slightly within the estimates. The herbaceous perennials have become well established and have already given an abundant supply of the best material for class illustration. The plants in these plots have been so selected and arranged as to afford a large number of specimens of our native flowers during late autumn and early spring, the only season when the Garden out of doors can be made of use to our College students. To this new land were carried all the plants from the old rockery under the maples. which had become filled with the roots of trees and which it was almost impossible to keep in order without much expense. By this change the expense of weeding has been reduced.

In June we removed all our larger greenhouse plants, except a few delicate exotics, to the shaded space formerly occupied by the large rockery. The gardener exhibited great skill in grouping the plants so as to form a tropical garden of much beauty. The plants thus carried from the houses have appeared to suffer no injury from the exposure and it is therefore proposed to make the same display of them next year.

The stone bank of the central pond was reset in May, and tue bottom of the basin was so far repaired as to give us a good depth of water through the whole summer, and we were therefor able to cultivate some water-plants which have not hitherto done well in our Garden. The larger pond has given considerable trouble during the year. The water supply from rainfall has been insufficient to give us anything but a stagnant and unsightly marsh. It will be necessary to make important changes in it within a short time, but it is not clear that the funds of the Garden will permit us to engage in the work the coming year.

To guard against the possibility of being cut off from the city supply of water in time of scarcity, the driven well — spoken of in the last report — has been finished, a tank-house built, and an engine procured. The water is much harder than that furnished by the city and it will therefore be used for the present chiefly for the ponds and the paths.

The dwelling-houses in the Garden are old structures which annually need considerable repairs to make them comfortable, and this expense must be borne by the income of our funds. During the past year the expenses for this purpose have been more than ordinarily heavy. On July 4th the roof of the gardener's house was set on fire by a cracker and much damage was done before the fire department could be summoned. It seemed, on the whole, best to take advantage of this undesired opportunity; the whole roof was put in good order and other necessary changes were made.

It was stated in the last report that our palm-house and its wings had become unsafe. The necessity for immediate rebuilding had become so urgent, that the Director would have been justified in drawing down the slender capital for purposes of reconstruction. But, happily, this necessity was obviated by the timely generosity of friends of the Garden, who authorized the erection of a plain and substantial structure on the site of the old one. By the wish of the donors the greenhouse architects, Messrs. Lord and Burnham of Irvington, N. Y., were engaged to perform the whole work. In planning the house, the advice of Mr. B. M. Watson, Jr., was sought and acted upon.

The present house is somewhat larger and higher than the old one and is in all respects a satisfactory structure.

Some changes have been made in the whole heating apparatus, so that all the boilers have been brought into one cellar, thus securing additional protection against fire and a more complete control of the heat in all the houses.

The cost of the new greenhouses (exclusive of these changes in the heating apparatus and a few other modifications rendered necessary by rebuilding), is $4,800. This sum was given to the University by Messrs. H. H. Hunnewell, Frederic L. Ames, and B. P. Cheney. This gift has placed the University in possession of a strong, convenient, and beautiful house adapted in every way to the needs of University instruction.

The first greenhouse built at the Garden was a "lean-to" which was as long as the present palm-house and the east wing taken together, and was nearly as wide as the wing itself. In 1842, when Professor Gray assumed charge, this house was in a fair state of preservation. In 1858 the Corporation received from the executors of the Dowse estate the sum of $2,000 for the construction of a conservatory. To this sum was added by private gift the further amount of $685, the whole of which was expended for the palm-house and its wings. The rafters of the old house were used in building a useful greenhouse behind the first range. In 1872 a very important addition was made by gift of H. H. Hunnewell, Esq.; a well-planned house was built to connect the new lecture-room (also his gift) with the western wing of the palm-house. Changes by which the heating apparatus was much improved were made in 1876. Three years later a small house was built by money received from private gift, and the frame of the historic "lean-to" was replaced in that year by an entirely new set of rafters. When this change was made the old sashes were turned to account for the construction of hot-bed frames and the like, so that we are now using in the service of the Garden some of the materials which were first employed near the beginning of the present century.

The following classes have been supplied with material for study from the Garden: Natural History 3 (general Botany, an elementary course), Natural History 5 (Biology), Natural History 7 (advanced Botany), and the Summer School. The Summer class in Botany was conducted by Professor William Trelease of the University of Wisconsin. The number of pupils in attendance was discouragingly small and naturally suggests the propriety of discontinuing the enterprise. If it were possible to utilize the Summer Course in any way for undergraduate instruction in Botany during the only time when the Garden can be expected to furnish all needed material, the thought of giving it up would not be entertained. But experience has shown that no College students, after the year's work in Cambridge, are willing to remain for six weeks more in the summer vacation.

It is to be remembered that every plant in the Botanic Garden costs something, either in original outlay or in its care, and it is a difficult as well as a delicate problem to decide as to the number and kinds to be cultivated. Since the Garden is to be maintained primarily for purposes of instruction and research, and since the term when students are in Cambridge for instruction and research extends only from October to July (the months when plants must be cultivated under glass and at great expense), it is plain that heavy expenditures must be made during the winter and spring months, and that comparatively little of our income can remain for ordinary running expenses in summer. But, on the other hand, the Garden is an attractive adjunct of the University and it must be maintained in a manner worthy of the University even in the months when no students are on the ground. Even with our present income it is possible to render the Garden attractive to students and teachers in our public schools, to amateurs interested in Botany, and also to provide with materials for investigation the few students who find their way to it in the summer.

A large part of the apparatus and supplies for the Laboratory of Vegetable Physiology has been already transferred to the convenient rooms in Harvard Hall assigned for the purpose by the Corporation, and work by advanced students has already been begun. To defray the necessary running expenses of the Laboratory, and to bring it up to a good degree of efficiency, considerable expenditures must be made. It is believed that by the exercise of great economy a part of these expenditures can be met for the present year by the income of the Botanic Department Fund. If the experiment of conducting our well-equipped Laboratory upon these slender means should prove a success, there can be no doubt that the friends of the department will aid in placing it upon a secure and ample foundation.

During the past year the Garden has conducted some advantageous exchanges and has been the recipient of many plants by gift. Among the latter should be mentioned the shrubs furnished by the Arnold Arboretum.

At the close of the last College year our head gardener, Mr. William Falconer, left the Garden in order to accept private employment. His place has been satisfactorily filled by Mr. W. A. Manda, a young man of experience and great industry, who has heartily co-operated with the Director in every way.

GEORGE LINCOLN GOODALE, *Director*.

November, 1884.

To the President of the University:

Sir, — As Director of the Chemical Laboratory I have the honor to present the following report for the academic year 1883–84: —

During the past year Professor Jackson was absent in Europe and the courses of instruction in this department were distributed as follows: the course of elementary lectures on general chemistry to the Freshman class was given by the Director; the lectures in Chemistry 1 (of the elective courses of the College) were also given by the Director, while the Laboratory work was under the charge of Mr. G. S. Hartshorn; the course on Mineralogy (Chemistry 2) was given by Mr. O. W. Huntington; the course on qualitative analysis (Chemistry 3) was given by Professor Hill, assisted by Mr. C. P. Worcester. The course on quantitative analysis (Chemistry 4) was given by the Director, assisted by Mr. O. W. Huntington; the course on organic chemistry (Chemistry 5) was given by Professor Hill; the advanced course in general chemistry (Chemistry 6) was given by the Director, as was also a course in crystallography and the optics of crystals (Chemistry 7); the advanced students in organic chemistry (Chemistry 9) worked under the special direction of Professor Hill.

The several laboratories were under the oversight of the following assistants. The qualitative laboratory under that of Mr. Worcester; the quantitative laboratory and the mineralogical laboratory, of Mr. Huntington; the organic laboratory, of Mr. Garratt.

The total number of students occupying desks was one hundred and ninety-one. They were distributed as follows: Seniors 29, Juniors 38, Sophomores 75, Freshmen 2, Lawrence Scientific students 9, Special students 8, Graduate students 4, Summer course 25. These students were distributed among the several courses as follows: —

Chemistry 1	100
Chemistry 2	16
Chemistry 3	35
Chemistry 4	15
Chemistry 5	12
Chemistry 6	7
Chemistry 7	1
Chemistry 9	2
Summer course	26
	214

This last aggregate is larger than the number of persons studying in the Laboratory, because twenty of these students took more than one course in Chemistry.

As in previous years, the number of advanced students was inconsiderable as compared with those who elected the elementary courses. Courses 1 and 2 comprise more than one half the students using the Laboratory, while in Courses 5, 6, 7, and 9 there were only fourteen students, most of whom however elected more than one course. These facts indicate an unsatisfactory condition, which demands serious consideration. Large numbers are induced to elect the elementary courses by the interest which the presentation of the remarkable results of chemical science in the lectures of the Freshman year naturally commands; but as these men come to the study of the subject with no previous preparation or preliminary training, the larger number find that they have no aptitude for experimental work and only the few continue the study whose natural abilities enable them to overcome the disadvantages under which they labor. The Director desires to call special attention to this point, because he is convinced that the best results of scientific culture cannot be obtained in the Laboratory until the students bring to the University a preparation corresponding to that which is demanded by the literary departments.

The scientific results from the work at the Laboratory were less than usual during the past year in consequence of the diminution of the working force arising from several causes, although the zeal and activity of those able to work was unabated.

Professor Hill and Dr. Sanger have studied the bromine derivatives of pyromucic acid. They prepared two isomeric monobrompyromucic acids and studied in detail their properties and decomposition products. They have also shown that two isomeric dibrompyromucic acids are formed in the decomposition of the pyromucic tetrabromide with alkalies and the products formed by the oxidation of these acids enabled them to draw certain conclusions concerning the constitution of pyromucic acid itself. They have also made the tribrompyromucic acid. Professor Hill and Mr. Hartshorn prepared and studied certain bromine derivatives of furfuran, the most interesting of these being a dibromfurfuran and its tetrabromide. This dibromfurfuran absorbs oxygen from the air at ordinary temperatures, and when shaken with air and water yields maleic acid. J. N. Garratt, under Professor Hill's direction, studied the chlorine derivatives of pyromucic acid and prepared a dichlorpyromucic acid, which however he was unable to study more fully.

Professor Hill studied somewhat more in detail the acid isomeric with monobrommaleic and monobromfumaric acids obtained by the action of alkalies upon mucobromic acid, but reached no definite conclusions as to its structure. The results of these studies were announced in the following papers: —

Ueber die Einwirkung von Alkalien auf die Mucobromsäure. Berichte d. deutschen chem. Gesellschaft. H. B. Hill. XVII. 238.

Ueber Substituirte Brenzschleimsäure. Berichte d. deutschen chem. Gesellschaft. H. B. Hill and C. R. Sanger. XVII. 1759.

Mr. Young made a series of thermo-chemical studies of the alkaline aluminates, determining the heat of formation as well as the heat of solution of these unstable compounds with a view of defining the limits, if such exist, between the effects of solution and those of chemical combination. As some of his results were in conflict with data given by Thomsen, he undertook an exhaustive investigation of the reaction between solutions of alum and potassic hydrate, on which the most fundamental of these data was based. The work is not yet fully completed, but thus far the results indicate that this reaction is not simple and well defined as heretofore assumed.

Under the oversight of the Director a large amount of work in thermo-chemistry was also accomplished by the students in Chemistry 6. Thomsen's new work on the subject was followed as a guide and many of the results of this eminent investigator were verified; and although the work did not furnish any results worthy of publication, the experience gave the Director increased confidence in the value of this new direction of chemical study as a means of higher education in experimental science.

Thirty years ago the writer suggested the idea that the combining proportions of elementary substances might vary within certain limits, basing the hypothesis on an investigation of the composition of certain crystalline compounds of zinc and antimony formed under determinate conditions. Within a short time this hypothesis has been revived and advocated by commanding authority; and although the writer's subsequent experience has not tended to confirm his earlier views, yet in continuing his revision of the atomic weights he thought it desirable to study cases of weak chemical compounds where we should expect the variations of proportions, if any, to appear most marked. With this view he has studied the preparation of oxide of silver and its reduction by hydrogen gas. The study has involved an extended investigation of the conditions under which oxide of silver and hydrogen gas can be prepared in large quantities in a state of great purity and has led to the conclusions: first, that the proportion of oxygen and silver in this unstable oxide are absolutely definite; and secondly, that in the reduction of oxide of silver by hydrogen gas a considerable portion of the oxygen escapes without uniting with hydrogen. These results not only indicate that the fundamental law of chemistry is absolutely definite, but they also point to a probable explanation of the anomalies observed in the reduction of oxide of copper.

Until the present year the Summer School in Chemistry has been from its beginning under the direction of Dr. C. P. Mabery, who has wisely adapted its courses to the needs of those seeking to learn the best methods of teaching experimental science. The appointment of Dr. Mabery to a professorship in the Case School of Applied Science in Cleveland, Ohio, was noticed in the last report, and the Summer School has thus lost his valuable services. During the last summer the School was carried on under the direction of Mr. A. V. E. Young and Mr. Charles P. Worcester, who fully maintained its previous standard of efficiency. Courses were given in experimental chemistry and in both qualitative and quantitative analysis, and the number of students was nearly as large as before.

The equipment of the Laboratory has been considerably increased during the last year. A work-room has been furnished with apparatus for crushing and pulverizing, which has long been needed. The store-room has been removed to the upper story of the building, and on the third floor a private laboratory and a class-room have been fitted up for Professor Hill. On the lower floor a laboratory has also been opened for advanced students.

JOSIAH P. COOKE, *Director.*

To the President of the University:

Sir, — The termination of the annual subscription in aid of the Observatory and the partial replacement by the income of a recently subscribed endowment, were mentioned in my last report. The amount of the temporary subscription somewhat exceeded the annual sum of $5,000. Moreover many of the contributors paid their subscriptions for the whole term of five years soon after making them, thus enlarging their donations by a considerable amount of interest since accumulated in the hands of the College Treasurer. The expiration of the subscription, therefore, did not immediately produce its full effect in diminishing the available resources of the Observatory. But the time has now arrived when a considerable restriction of scientific work appears to be inevitable. The recently subscribed endowment, indeed, will permit the continuance of some important researches undertaken during the past five years, which without it must now have been laid aside. Still the decrease during the last ten years in the rate of interest yielded by the funds of the University is so great that the income of the new endowment of $50,000 does not fully replace the diminution in that received from the older endowments. For the ten years ending in 1876 the average rate of interest was 7.21 per cent, while for the last year it has been only 5.17 per cent. The new endowment must therefore have been as much as $70,000 to prevent a reduction in the resources of the Observatory.

The liberal response of the friends of astronomy in this neighborhood to former appeals for assistance prevents a further demand upon their generosity at the present time. The alternative of a reduction in the expenses of the Observatory must therefore be accepted. It has accordingly been found necessary to dispense with the services of five assistants, and to make a corresponding decrease in expenditures of other kinds. The retirement of so many assistants is particularly unfortunate since the special skill which they had gained in their departments of work by the experience of several years will now be lost to the Observatory. At the same time they will be subjected to the inconvenience of adapting themselves to other pursuits, after having devoted much time and labor to the attainment of their present proficiency in the principal kinds of observation and computation which are required by the researches here pursued.

The place of one assistant has fortunately been supplied without expense to the Observatory by the courtesy of Commodore Walker of the U. S. Navy. He has ordered Ensign E. E. Hayden to duty at this institution, to assist in the work carried on with the Meridian Circle. This arrangement, it is believed, will result in mutual benefit, since an opportunity of acquiring skill in advanced scientific work is thus afforded to an officer of the Navy, while the Observatory enjoys the advantage of the excellent preparation for such work resulting from his previous education and experience.

It is to be hoped that the present restriction of the activity of the Observatory may prove to be only temporary, through the continued addition of unsolicited donations. An important bequest of $5,000 has been received during the past year from the estate of the late Thomas G. Appleton, who has thus given a further evidence of the interest which he showed in the Observatory during his life. The gift of £25 received from Mr. T. W. Backhouse of Sunderland, England, as a contribution to the subscribed endowment, also demands special acknowledgment, since it indicates that the interest taken in the welfare of this Observatory extends beyond its immediate vicinity.

Many valuable additions have been made by astronomers in this country and in Europe to the collection of astronomical photographs undertaken last year. It is hoped that before long a catalogue of the collection may be prepared.

East Equatorial.

Eclipses of Jupiter's Satellites. —Photometric observations of these eclipses have been continued upon the system adopted in 1878. In all, two hundred and eighty-four eclipses have now been observed, forty-seven since the end of October, 1883.

Revision of Zone Observations. — The revision of the observations given in Volume VI. of the Annals of this Observatory, so far as they relate to stars between 50′ and 60′ north of the equator, has been completed during the last year. Some discrepancies in position and magnitude have been found which cannot readily be explained by errors in the observations. The stars thus indicated as interesting objects for further examination will be reobserved.

Standards of Stellar Magnitude. — The charts of twenty-four regions extending 4^m in right ascension and 10′ in declination, and following a series of twenty-four bright stars, as described in the last report, have now been completed. Valuable assistance in revising these charts has been received from Professor E. S. Holden, Director of the Washburn Observatory, Madison, Wisconsin. The telescope of the Washburn Observatory has a slightly larger aperture than that at this Observatory. Similar assistance has been promised by some other observers with still larger telescopes.

Meanwhile the selection of stars for standards of stellar magnitude has been made for many of the regions thus charted, and photometric measurements of their light have been begun. The brighter stars of each region are within the reach of the meridian photometer. To connect these with others of the tenth and eleventh magnitudes the modified wedge photometer is employed in nearly the same manner as in the revision of the zone observations already mentioned. With the addition of a simple shade-glass stars of the second magnitude may be observed with this wedge, and a further connection is thus made between its work and that of the meridian photometer. The stars in each region which are too faint for observation with the wedge are compared with the bright star, preceding the region under examination, by means of Photometer I. described in Volume XI. of the Annals of the Observatory. Many of the stars observed with the wedge can also be measured with Photometer I. and all the results of the work may thus ultimately be referred to the meridian photometer. Additional photometric methods of measurement are under consideration and it is hoped that the magnitudes of the standard stars which are selected in each region will be determined with a satisfactory precision by these investigations.

Comets. — The observation of comets has been continued by Mr. Wendell with the object of furnishing material for the early computation of their orbits and of providing means for subsequent determinations of greater accuracy. The observations therefore are chiefly confined to the few days following the discovery of a comet and to occasions when it is too faint to be observed with any but powerful telescopes. Comets 1884 I., II., and III. were respectively observed on 6, 6, and 7 nights.

Spectra and Color of Stars. — Two separate series of investigations with regard to stellar spectra have been undertaken. It has been proposed to examine all stars known to have banded spectra with the object of approximately determining the positions of the bands in each upon a uniform system. This would afford means for a more definite and satisfactory classification of these spectra than at present exist. The method of measurement consists in comparing the spectrum with a notched bar beside which it is placed in the field of the telescope. The proper position of the spectrum is secured by a previous reference to an image of the star formed by light allowed to pass beside the prism which forms the spectrum.

For the acquisition of more definite knowledge than at present exists with regard to the color of stars, it has also been proposed to observe all stars to the fourth magnitude inclusive, and north of the thirtieth parallel of south declination, with an instrument designed for the purpose. The spectrum of the star to be observed is properly placed in the field by the same means as in the other instrument just described. It is then carried by its diurnal motion behind a series of narrow bars placed at right angles to the spectrum, small portions of which are accordingly visible in the narrow spaces between the bars. The successive extinction of these portions of the spectrum is observed in a wedge of tinted glass. In this manner the relative brightness of definite parts of different spectra may be compared.

The diminished resources of the Observatory will probably not permit the completion of these observations upon the original plan. The observations relating to the banded spectra must be somewhat restricted, and those relating to the color of the stars must be confined to stars of the first three magnitudes.

Revision of DM. Magnitudes. — The meridian photometer permits the observation of stars as faint as the magnitude 9.0 and even somewhat fainter. But for the observation of the faintest stars in the Durchmusterung a more powerful instrument is preferable. The modified wedge photometer used with the East Equatorial in the revision of the zone observations already mentioned has accordingly been applied to the observation of the zone between 49° 50′ and 50° 0′

north of the equator. This zone is a part of that which has been observed here since 1870 with the meridian circle, for the determination of the positions of stars. It is also under observation with the meridian photometer, which will accordingly furnish points of reference for the observations made with the wedge photometer applied to the equatorial. Each star belonging to the zone and occurring in the Durchmusterung is twice observed, on different nights, and the interval between its transit over a bar and its disappearance in the wedge is recorded. This work can be carried on by a single observer, although some time is saved by the assistance of a recorder when it can be had. If the results prove satisfactory a more extensive revision of the magnitudes given by the Durchmusterung will be undertaken in the same way.

MERIDIAN CIRCLE.

The observations of fundamental stars has been continued throughout the year, but with less regularity than during former years on account of the interruption caused by the reobservation of scattering zone stars of the Durchmusterung list. During the Autumn Equinox of 1883, 604 observations of fundamental stars were made. The Sun was observed on 34 days, and Polaris on 26 days. During the Spring Equinox of 1884 the Sun was observed on 33 days, Polaris on 30 days, and 261 observations of fundamental stars were obtained. At other times during the year the Sun was observed 46 times, Polaris 59 times, and 301 observations of fundamental stars were made.

At the completion of the reduction of the zone stars, observed between 1870 and 1879, it was found that about 400 stars required further observation. In the greater number of cases it was found that the wrong star had been observed when two or more were in the same field of the telescope. In other cases it was considered advisable to settle doubtful cases, especially with regard to the minute of declination, by a reobservation. This revision of the zone observations was begun October 9, 1883, and was completed August 9, 1884. 1463 observations were made of zone stars, and 671 corresponding fundamental stars were observed in addition to the observations enumerated above. It will be seen from this summary that the total number of observations made with the meridian circle is 3528, and does not materially vary from the number in former years.

The investigation of the errors of the east circle has occupied a large portion of the time since July of the present year. Eighteen determinations of the stars of the 30° divisions of the circle have been made with very satisfactory results. Two independent determinations of the 15° divisions have also been made. It is proposed to continue the investigation of the main subdivisions of the circle at regular intervals throughout the coming year. This work will for the most part occupy the entire time of Professor Rogers for several months, and will take the place of the ordinary observations. During the year considerable progress has been made in printing Volume XV. The catalogue of all the primary and secondary stars observed between 1870 and 1879 for the epoch 1875.0, together with the mean values of the coördinates of each star for each year of observation is printed, and will shortly be issued in advance of the publication of the entire volume. The reductions of the zone stars observed during the past year are about one half completed.

MERIDIAN PHOTOMETER.

During the past year 141 series of observations have been taken with the meridian photometer by Mr. Wendell and myself. The total number of separate settings is about 27,500, an increase of more than a third over the previous year. The accordance of the results also shows a decided improvement in the accuracy of the measures. The average deviation of the separate measures of the one hundred circumpolar stars to which all the others are referred, amounted to about .18 of a magnitude with the first meridian photometer. The new instrument gives .15, .12 and .11 for the same quantity in the three years in which it has been employed. Since the value of the observations is proportional to the squares of these quantities, it appears that one of our present observations is nearly equal to three with the smaller instrument employed in the observations which have been published in Volume XIV.

The principal investigation now carried on with the meridian photometer consists in the measurement of stars the magnitude of which has been estimated at each of two observations during the recent revision of the Durchmusterung. The number of such stars is about eight thousand. Besides the two estimates just mentioned, two others were made in the original formation of the Durchmusterung, and additional estimates for many of the stars also occur in other catalogues. The results obtained by the meridian photometer will therefore have a wide application in the determination of scales of magnitude. In connection with the photometric observations, estimates of magnitude are made by the observers.

Another class of stars observed with the meridian photometer comprises a part of those already measured with the smaller instrument of the same kind employed here during the years 1879 to 1883. The stars selected for remeasurement are those for which the magnitude resulting from any single observation differed more than 0.5 from the mean of the other results. All stars belonging to Flamsteed's British Catalogue, and not already measured with the first meridian photometer, are likewise observed with the new intrument. These observations will serve to complete the reduction of the comparisons made by Sir William Herschel. Other observations made with the meridian photometer relate to asteroids, to known and suspected variables, to stars with peculiar spectra, and to objects having any special characters which may make it a matter of interest that their light should be measured.

Almucantar.—It was mentioned in the last report that a small instrument bearing this name and devised by Mr. Chandler had been employed by him with very satisfactory results in the observation of transits over given parallels of altitude. He accordingly decided upon the construction of an instrument of the same kind and sufficiently large for the execution of researches similar in importance and delicacy to those usually undertaken with the best meridian instruments. The telescope of this large almucantar is 4 inches in aperture and 43.8 inches in focal length. The frame to which it is attached floats in a shallow trough of mercury, as in the previous instrument, and the entire apparatus revolves upon a vertical axis. Various difficulties which occurred in its construction were removed by the ingenuity of the inventor, and it was mounted during April, 1884. After about a month of experimental observations it was applied to the determination of the corrections required by the right ascensions of certain fundamental stars near the pole, and the declinations of others near the equator. It is hoped that the results of this investigation will establish the value of the new principles of construction and of observation employed in the undertaking. Up to November 1, about 700 observations of 190 stars had been made. Many additional observations have been made for other purposes; in particular, the determinations of clock error required by the time service of the Observatory have been frequently made by the almucantar.

The results thus far secured seem to justify the expectations entertained of the capacity of the almucantar to determine with exactness the relative positions of stars widely separated from each other. It will be useful, accordingly, not only in observations of time and latitude but also in various higher and more delicate problems of practical astronomy, for the solution of which it furnishes a new method.

The probable error of a single observation of zenith distance is in general ± 0.″37, and of a single observation of right ascension ± 0.ˢ025. Certain minor improvements in the apparatus, now under consideration, are expected to afford a still further increase in accuracy.

The latitude of the dome of the Observatory given by three nights' work with the new almucantar is 42° 22′ 47.″58 ± 0.″09, which closely agrees with the value 42° 22′ 47.″63 found last year by the small almucantar.

The character of the various results given above encourages the hope that the use of the almucantar may become a permanent part of the work done at this Observatory. Should the results prove no more accordant than those of other instruments, the fact that they are obtained by an entirely independent method would free them from many of the errors which are commonly repeated in meridian observations.

MISCELLANEOUS.

Variable Stars. — The observation of telescopic variables was continued by Mr. Chandler upon the same system as before until May, since which time he has been chiefly occupied with the almucantar. He obtained 1240 observations of the light of variable stars between November 1 and June 1. He also made 952 observations of the color of 108 variable stars. The color was generally estimated upon an arbitrary scale, but many determinations were also made by the estimation of magnitudes with and without the use of a blue shade glass. The results of this work seem to establish the law that the redness of variable stars increases with the length of their periods.

Three observers of variable stars have acted in coöperation with this Observatory during the past year: Mr. H. M. Parkhurst, of New York, Rev. J. Hagen, S. J., of Prairie du Chien, Wisconsin, and Mr. J. H. Eadie, of Bayonne, N. J. Mr. Parkhurst, in addition to estimates of relative brightness, has made many photometric observations with apparatus devised by himself. He has recently undertaken the observation of the comparison stars employed for several variables by previous observers. Father Hagen, assisted by Messrs. Zwack and Zaiser, besides observing many known variables, has examined a number of bright stars suspected of variability. Mr. Eadie is acting in special coöperation with Mr. Parkhurst, in such a manner as to obtain the best results without needless repetition of work. The labors of all these gentlemen have secured a large amount of valuable knowledge.

Under the title of "Recent Observations of Variable Stars" (Proc. Amer. Acad. XIX. 296) information was brought together for the guidance of observers in that branch of astronomy with regard to the selection of objects for observation. The pamphlet contains a list of variable stars with indications of the work recently done in observing them, so that the relative importance of further observations of any object in the list may be apparent. The publication will be continued annually if it appears to meet a want among astronomers, and if they comply with the request expressed in the pamphlet to forward to the Observatory such notices of their observations of variable stars as may serve to render the list more complete.

Time Signals.—The new standard time referred to in my last report was introduced in November, 1883. At Greenwich midnight on the seventeenth of that month the signals according to the meridian of the Boston State House were discontinued; at the next Greenwich noon signals over our lines were sent conforming to the minute and second of Greenwich mean time; and at mean noon on the seventy-fifth meridian on Sunday the eighteenth the Boston time-ball was dropped according to Eastern time, five hours slow of Greenwich mean time.

The office of the U. S. Signal Service having been moved on October 1, 1884, from the Equitable building to the Boston Post-Office and Sub-Treasury building, the time-ball has been dropped since that date by an officer detailed by the Police Commissioners. A new ball, however, is to be erected on the Post Office building to be dropped by the Signal Office. The public has been much indebted to the management of the Equitable Life Assurance Company for accommodating the ball upon the roof of their building and for furnishing and maintaining the apparatus used there.

Several companies having recently begun operations for distributing time by electric clocks and by striking the hour and minute to the listener at a telephone, our time has been furnished them during their experimental steps either gratuitously or for a small compensation. The Observatory however has not been responsible for ascertaining that the companies have furnished their patrons with time conforming to the standard. Negotiations are pending for a more intimate connection of one or more of these enterprises with us. The Western Union Telegraph Co. have received our signals and have been permitted to transmit them automatically to others. The following list comprises those who receive our time for regulating their time-pieces and similar purposes, but who are not authorized to directly transmit or automatically repeat the signals to others: American Watch Co., C. W. Beals, Bigelow, Kennard & Co., Wm. Bond & Son, Boston Electric Time Co., C. A. W. Crosby, Equitable Life Assurance Co., E. Howard & Co., Kattelle Bros., J. V. Kettell & Co., Geo. H. Morrill & Co., Jas. Munroe & Son, N. E. Telegraph and Telephone Co., G. H. Richards, Jr., R. I. Electric Co., Shreve, Crump & Low. Alvah Skinner & Son, Ira P. Stere & Co., U. S. Signal Service Office. The large subscribers, on whom depends the existence of the time service as now conducted, are the city of Boston and all the steam railroads having stations in Boston, except the Boston & Concord R. R. and the Revere Beach R. R.

Telegraphic Announcements. — This department of the work of the Observatory is conducted by Mr. Ritchie upon the enlarged system mentioned in the last report. During the year announcements have been sent to thirty institutions or individuals in this country. The total number of messages is 246, of which 107 related to asteroids, 119 to comets, and 20 to the elements of cometary orbits. The number of asteroids discovered was nine, but with regard to one of these discoveries no telegraphic information was received from Europe. The number of comets discovered was four. All the notices were distributed by means of the Associated Press and the local newspapers, as well as by telegraph. The "Science Observer" also issued thirteen special circulars relating to the various announcements.

PUBLICATIONS.

The chief publication of the Observatory during the past year has been Volume XIV., Part I. of its Annals. This gives the principal results of the work done with the first meridian photometer. It includes a catalogue of 4,260 stars with their magnitudes as determined by the photometer and according to the estimates or measures of seventeen other authorities. As uniformity in reference to catalogues is always desirable, it has been suggested in the volume that this catalogue should be known as the "Harvard Photometry" and designated by the abbreviation H. P. Since it contains the approximate places for 1880 of all stars visible to the unaided eye in this latitude, as well as their magnitudes, its principal columns have been separately reprinted and offered for sale at the cost of publication, under the title of Harvard Photometry. The stereotype plates of this portion of the catalogue will be preserved, so that additional copies may be printed at any time when they may be needed.

The second part of Volume XIV. is now in course of publication. It contains the discussion of many special topics connected with the photometric observations recorded in the first part of the volume, and with the corresponding estimates or measures of other observers since the time of Ptolemy.

The publications named below have appeared since the similar list in the last report was drawn up, either as official communications from the Observatory or as papers prepared by its officers individually: —

Thirty-eighth Annual Report of the Astronomical Observatory of Harvard College.

On the Possible Connection of the Comet Pons-Brooks with a Meteor-stream. By S. C. Chandler, Jr. Astronomische Nachrichten, cvii. 275.

Observations and Ephemeris of U Ophiuchi. By S. C. Chandler, Jr. Id. cviii. 55.

Observations of Meteors, 1883, December 6. By O. C. Wendell. Id. cviii. 433.

Elements and Ephemeris of Comet 1884 II. By S. C. Chandler, Jr. Id. cix. 223.

On a Convenient Formula for Differential Refraction in Ring-micrometer Observations. By S. C. Chandler, Jr. Id. cx. 177.

On Gegenschein and other Zodiacal Phenomena. By Arthur Searle. Id. cix. 257.

The Zodiacal Light. By Arthur Searle. Proc. Am. Acad. of Arts and Sciences, xix. 146.

Researches upon the Photography of Planetary and Stellar Spectra. By the late Henry Draper. Results of Measurements by E. C. Pickering. Id. xix. 231.

Sir William Herschel's Observations of Variable Stars. By Edward C. Pickering. Id. xix. 269. The Observatory, vii. 256.

Recent Observations of Variable Stars. By Edward C. Pickering. Proc. Am. Acad. of Arts and Sciences, xix. 296.

The Phases of the Moon. By Arthur Searle. Id. xix. 310.

Report of the Committee on Standard Time (Wolcott Gibbs, Francis A. Walker, and J. Rayner Edmands). Id. xix. 473.

Photometric Observations of Neptune at the Harvard College Observatory. By Edward C. Pickering. The Observatory, vii. 134.

Light of Comparison Stars for Vesta. By Edward C. Pickering. Am. Journal of Science, cxxviii. 17.

Second Report of the Committee on Standards of Stellar Magnitudes. Edward C. Pickering, Chairman. Proc. Am. Assoc. for the Advancement of Science, 1883, p. 1.

On the Regraduation of the Harvard College Meridian Circle *in situ*. By William A. Rogers. Sidereal Messenger for December, 1884.

On a Practical Solution of the Perfect Screw Problem. By William A. Rogers. Transactions of the American Society of Mechanical Engineers. Vol. V.

On some Suspected Variable Stars. By S. C. Chandler, Jr. Science Observer, IV. 60.

Elements and Ephemeris of Comet 1884 II. (Barnard). By S. C. Chandler, Jr. Science Observer, IV. 80.

EDWARD C. PICKERING, *Director.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — I have the honor to submit the following report on the condition and progress of the Arnold Arboretum during the year ending August 31, 1883: —

Construction upon the roadways under direction of the Park Department of the City of Boston has been steadily continued during the year (see Appendix C. joined to the Report of the Director of the Arnold Arboretum for 1882–83). The portion of the main driveway which is to connect the entrances to the Arboretum from Centre and South Streets is nearly completed, and will be opened to the public early next year. The progress made, however, in the construction of the road-bed and the grading of slopes has not justified the beginning, even, of any of the Arboretum plantations in connection with this drive.

Plantations and Nurseries.

Permanent boundary plantations, varying in width from 25 to 90 feet, and with a total length of 2,397 feet, have been made during the year. The ground occupied by these plantations, which are intended to protect the borders of the Arboretum, and cut off the view from the inside of buildings and other inharmonious objects, has been prepared in the most thorough and careful manner. Nearly 3,000 trees supplied from the nurseries were used in these plantations. In spite of this draft, however, the rapid accumulation of plants has made it necessary to still further increase the area of nursery ground during the year. Nursery plants have generally been transplanted again; and all the collections are in a satisfactory condition. The card-catalogue of this collection now contains 3,425 entries, an increase during the year of 883 entries.

The collection of shrubs is especially large and rich, containing many rare species here cultivated for the first time. It is proposed for the sake of convenience of management and comparison to arrange this collection during the coming year in systematic order, and in such a way as to allow its increase and the development of individuals until the completion of the roads by the city on the east side of the grounds make it possible to permanently group the different shrubs upon a more picturesque and natural plan than can now be adopted. Two acres of ground have been drained, enriched, and prepared to receive this collection, which will be planted next spring in wide parallel beds.

In connection with the construction of roads 328¼ squares of excellent loam have been stacked at convenient points for future use in planting at a cost to the Arboretum of $498.08.

Woods.

A large part of the Arboretum woods is composed of old and nearly fully grown trees. They occupy the most rocky and less fertile portions of the ground, and begin everywhere to show the effects of early crowding and insufficient nourishment. Many of these trees are gradually dying at the top — a sure sign that they are in a precarious condition.

It is desirable to keep permanently covered with natural woods all the rocky and sterile parts of the Arboretum unfit for collections, and a large portion of these old trees must be retained until a new growth is ready to replace them. A system of pruning the old trees in these permanent woods has been commenced during the year. This is slow and expensive work which will occupy, for the whole Arboretum, several years and which can only be performed by skilled labor under careful direction. It is expected, however, that trees thus pruned will regain considerable vigor and insure by the seeds they will shed and the protection they will afford the ground and young trees already growing among them the permanence of these woods.

INTERCHANGE OF PLANTS AND SEEDS.

The interchange of plants and seeds with other botanical and horticultural establishments has been continued during the year. There have been 4,518 plants (including cuttings and grafts) and 57 packets of seeds distributed as follows: To all parts of the United States 4,151 plants and 57 packets of seeds; to Great Britain, 2 plants; to Germany, 315 plants; to Chili, 50 plants.

There have been received during the year 6,525 plants (including cuttings and grafts) and 139 packets of seeds from 37 donors.

HERBARIUM AND MUSEUM.

Routine work in the Herbarium and Museum has been continued during the year under the immediate direction of Mr. Faxon, who has also made satisfactory progress upon the series of botanical drawings intended to illustrate the new *Sylva* of North America.

There have been added to the Herbarium 798 sheets of dried plants: the Museum has been enriched with important collections of woods, cones, and other fruits, photographs of trees, &c.

The Director, as President of a Commission appointed by the Comptroller of the State of New York to examine its forests and recommend a scheme of legislation for their preservation and management, has inaugurated during the past summer a preliminary survey of the forests of the Adirondack region with reference to their industrial and commercial relations to the rest of the State and their influence upon the flow of streams and water supply.

C. S. SARGENT, *Director.*

To the President and Fellows of Harvard College: —

During the past year we have had the advantage of occupying our new quarters, and it is with no little satisfaction that I am able to report the complete success of the new organization. Our present facilities for the instruction of undergraduates, of advanced students, and of specialists, enable us to accomplish all that we expected. The additional room now at our command for our Library has greatly facilitated its care and final arrangement; the reading room is far in advance of our wants. The Museum is now so fully equipped that its business of caring for the collections and giving instruction in Natural History can be carried on to great advantage. With ordinary foresight, we shall never hereafter fall back into the confusion which was almost a necessary preliminary to the present order. The orderly condition of the different departments now depends entirely upon the heads of the various branches and upon the instructors.

The old roof has been changed to correspond to that of the later additions, and the rooms thus obtained will be used for the storage of the Vertebrate Fossils, the dry Mollusca, and the Crustacea. This arrangement will give excellent working-rooms for these three departments, and bring the collection of Vertebrate Fossils into close connection with that of Vertebrate Skeletons, which is stored in the adjoining rooms.

The following annual courses of instruction have been given at the Museum: —

A course in Biology, by Professors Farlow and Faxon.

A course in Cryptogamic Botany, by Professor Farlow.

An advanced course in Zoölogy, by Professor Faxon.

General Lectures were given by Dr. Mark, who also took charge of the new Embryological Laboratory, while Professor Faxon took charge of the general Biological Laboratory, assisted by Mr. J. H. Perkins.

Professor Shaler and Mr. Davis gave the usual courses in Geology, Palæontology, and Physical Geography.

Professor J. D. Whitney gave, as heretofore, a course in Economic Geology, Mr. Wadsworth assisting in a part of the course.

The publications embodying original work carried on in the different departments, or based upon Museum materials, will be found enumerated in the special Reports which are printed in a separate pamphlet.

During the past summer the following persons pursued their studies at my Newport Laboratory: —

Mr. Fewkes, one of the Museum Assistants, devoted his time principally to the Embryology of Siphonophores.

Mrs. Whitman made good progress with her studies of the early stages of the Crab.

Professor C. O. Whitman assisted me in the continuation of my investigation upon the early stages of Fishes, commenced the previous year. A perliminary notice of this work has been published. "On the Development of some Pelagic Fish Eggs, by Alexander Agassiz and C. O. Whitman." (Proc. Am. Acad., XX., pp. 52. 1 pl., August, 1884.)

The Museum publications issued during the last Academic year consist of seven numbers of the Bulletin, and two numbers and two volumes of the Memoirs; the two complete volumes, on the Water Birds of North America, are in continuation of the publications of the California Geological Survey, in connection with Prof. J. D. Whitney.

About six hundred volumes have been added to the Library of the Museum during the past year.

Small collections of Vertebrate Fossils have been received from Wyoming and Kansas, but they have not yet been examined carefully enough to enable me to report upon their value.

A collection of alcoholic Invertebrates, destined for the Atlantic Exhibition Rooms, has been purchased from the Naples Zoölogical Station. It is in a remarkably perfect state of preservation.

We have also received from Professor Lesquereux the collection of fossil plants collected by Professor Lakes, principally in Colorado, which had been sent to him for study.

Among other noteworthy acquisitions, I may mention a fine Pterodactyle from Solenhofen.

The collection of North American Coleoptera bequeathed to the Museum by the late Dr. John L. Le Conte, has been sent to us by Mrs. Le Conte. Dr. George H. Horn, the life-long friend of Dr. Le Conte, was kind enough to superintend the packing and forwarding of this invaluable addition to our Entomological Department. He himself accompanied the collection to Cambridge, and we owe to his interest the excellent condition in which it has reached us.

The Europeo-Siberian Room is nearly ready for exhibition, and during the coming year the greater part of the faunal collection of the African Room will probably be sent to the Museum by Prof. H. A. Ward. The exhibition cases of the Atlantic Room have made good progress during the past year. It will be impossible to do anything towards the arrangement of the Palæontological Exhibition Rooms until the whole of our Palæóntological collections have been unpacked and passed through a preliminary examination.

The Museum collections have, during the past year, supplied materials to several specialists. A large part of the Blake collections are still in the hands of the naturalists, who have kindly undertaken the preparation of the Zoölogical Reports. As fast as the collections are returned, they have been distributed to those museums in this country and in Europe which give special attention to the study of Marine Faunæ. The Echini and Ophiurans, and a part of the Crustacea, have been thus distributed.

In the light of past experience, I look with no small concern to the future growth of the Museum. As collections accumulate, additional room will be required for their storage, and new assistants for their care. The resources of the institution will surely soon be entirely inadequate for the maintenance of the Museum on the scale of its present growth, if the policy thus far pursued is continued. The future welfare of the establishment is secured by its permanent connection with the University. But its funds naturally share the cautious management of the College, and the present Director has seen the income of the Museum gradually diminish from $35,000 a year to about $25,000. Meanwhile the salaries of the assistants and other employees have, with the greatest difficulty, been kept at about the same total as when our income was nearly one third larger. It is not to be expected that the public will take more than a very limited interest in the Museum, especially as in this vicinity there are no less than three Natural History establishments, all having very similar aims. With the present tendency to specialization, it seems impracticable to carry on an immense Natural History collection without a staff of specialists far greater in number than any institution not backed by government or by an immense endowment can ever hope to support. The present organization of the Museum is based upon the assumption that its resources will keep pace with the increased specialization of its different branches, and the attempt has been made to combine the work of assistants and that of original investigation. That officers' positions cannot be maintained except in connection with the permanently endowed Professorships of the University, is becoming self-evident. No University, even if it be a great centre for Natural History, can maintain more than a limited number of endowed chairs; and if the professional duties of their incumbents be not too arduous, a good amount of original work may be expected of them. Still, with the present tendency of science, original work cannot be based mainly upon the collections of a great museum. The geologist and the zoölogist must both supplement their work in the field. With the requirements of to-day, collections can only supply materials for investigations of limited scope; and while undoubtedly many most interesting problems require large collections for their solution, the more important biological problems of the day require materials prepared for special purposes in the laboratories of the Universities. It is there that the influence of the teachers will be felt in the direction given to the work of their more advanced students, and it should be the province of a University to foster this work by granting special facilities for it, as well as for the publication of these investigations. This the Museum is now prepared to do.

Laboratories for Biology and Geology — in their most extended sense — have been erected for the University. They have now been occupied for a year, and their capacity for work depends entirely upon the means for their equipment placed at the disposal of the various Professors connected with the Natural History departments. and upon the time they may have left from their professional duties for original research. There is no department of the University which depends so little for its success upon the resources of the College, as the Natural History Department connected with the Museum. Beyond the salaries of the Professors and Instructors, there is practically nothing which is not provided for by the Museum in the way of work-rooms and laboratories. Their care, their heating, and the supply of the materials for the students, do not fall upon the University; by far the greater part of the current publications in Natural History have for some time past been purchased by the Museum, and the publications issued under the auspices of the Museum provide the means for making known any investigation carried on in its laboratories.

The museum assistant in charge of a special department must naturally, if the purpose for which large collections are brought together is carried out, spend the greater part of his time in preparing them for the specialist who is at some future time to avail himself of the treasures brought together for his benefit. There is, therefore, the same danger that an eminent specialist, after his appointment to the curatorship of a department of a great museum, will find his museum duties so arduous as to prevent him, as his colleague in the professorial chair has been prevented, by official work, from doing any original work.

The main point for us and other directors of museums connected with educational institutions is to settle upon a policy which will in the end best promote the growth of a school of Natural History. while fostering original research in the occupants of the professorial chairs and in the assistants of the various departments.

Since the foundation of this Museum the conditions for scientific research in this country have greatly changed. The general government has now undertaken, in connection with the United States Coast and Geodetic Survey, with the Geological Survey, with the

National Museum, and with the United States Fish Commission, an amount of scientific investigation in various directions which makes it a mere waste of time for those not officially connected with these government establishments to undertake certain lines of work. Recognizing this, it becomes at once apparent that it is a mere waste of time and money for us to continue accumulations of collections which will most certainly be duplicated at Washington or New York; and that, beyond a very limited appeal to the public in the collections placed on exhibition, we should expend our resources only in the direction of fostering such original work as may most efficiently be conducted by the Professors holding endowed chairs in our University. This can be best accomplished by a comparatively small museum staff, provided the assistants necessary for laboratory instruction are supplied to the teachers, and they find time from their teaching to use the materials of this institution as far as it is available. The function of a museum is without doubt to use its resources in the purchase and care of special collections, made by their owners at the cost of a great expenditure of time and money. Some of these collections, illustrating the past history of a district, frequently represent the work of a whole lifetime devoted by some specialist to a limited field, in which his collections have been brought to a great state of perfection; and in such collections the Museum is very rich in certain directions. I would name only the Dyer, Taylor, Gebhard, Day, and Walcott collections, among the American; and the Bronn, Shary, Konick, and Schultz, for the other side. The owners of such collections are anxious that all their work should not be scattered to the winds, and that the materials they have brought together should be kept as historical documents.

In the care of geological and palæontological collections the difficulties of preserving them are inconsiderable, the cost is not excessive, and there are not many troublesome questions likely to arise beyond that of space. When, however, we come to zoölogical materials, the difficulties are great. As far as the collections placed on exhibition are concerned, their deterioration is a mere question of time. The director of any museum must constantly replace his Birds and Mammals, renew the alcohol of his Fishes, Reptiles, and alcoholic Invertebrates, and renew all his Insects after a while. If the number of rooms devoted to the public is not too large, the expense seems warranted, if we are to judge of the interest taken as shown by the constantly increasing number of visitors on week-days as well as Sundays. It is when we come to the collections of a perishable nature stored in the work-rooms devoted to special investigations that the cost of maintaining them may stagger the most enthusiastic collector.

Do the results justify such large expenditures? While we recognize the importance of keeping intact the historical collections, and take it for granted that this function is totally distinct from that other function, which museums are supposed to perform, of supplying special investigators materials for their study, it seems to me, nowadays, unreasonable to expect this of any museum. No naturalist who wishes to study fishes, except as regards their synonymy, will expect to find in any establishment, no matter what its resources may be, the necessary materials. He will be compelled to travel, to collect in the various fish-markets of the world, and to study his material on the spot. With the present facilities and the cost of travel. it would be far cheaper for an institution to supply the specialist with the necessary funds for such an investigation, if it be one of value and interest, than to go on for years spending in salaries of assistants, care of collections, interest on the cost of buildings, and so forth, sums of money which, if distributed to their ultimate object, would astonish the least prudent manager. Such accumulations of historical material are far too costly. The same sums spent in a different direction, in promoting original investigations in the field or in the laboratory, and in providing means for the publication of such original research, would do far more towards the promotion of natural history than our past methods of expending our resources.

There are stored in the cellars of the Museum immense collections of Fishes and Reptiles which have never been of use to any one except the assistants in charge of them. A very large part of this material, collected and maintained at great expense, ceases after a time to be of value for scientific purposes, and every year we are obliged to throw away as absolutely worthless a large number of specimens which cannot even be used up as students' material. One of the rooms in the cellar is filled with alcoholic Birds and Mammals. and with Vertebrate embryos, material which has become in a great degree useless for the purpose for which it was collected. The same may be said of the large alcoholic collections of Mollusks and of Crustacea. The latter, however, while perhaps not available for study, can hardly be kept in a condition fit for examination in any other way. A large part of the collection of Radiates is likewise useless for any nice systematic work. The expense and care required for the maintenance of a large collection of Insects is well known; the incessant care of Dr. Hagen and his Assistant has alone kept ours from going to ruin, as so many other entomological collections have done, from their mere size. But its increase involves now an expenditure the Museum can ill afford. Of course, with ample funds and a large number of aids, there is no limit to the growth of an entomological department. Our ornithological collection and that of mammal skins can be kept within a reasonable expenditure from the method of storage adopted. The osteological collection, also, when once properly prepared, need not be a constant source of expense. The cost of maintaining such a collection as is now stored in the Museum has been for the past eight years at the rate of $24,000 a year, of which nearly $18,000 is for salaries. This is merely for the care and maintenance of the collection, and does not include the cost of placing any part of it on exhibition, or the cost of keeping those rooms open to the public.

For these reasons I have gone somewhat into detail to point out what seems to me to be the true policy of the institution for the future, — to reduce its expenditures and staff to the strict minimum compatible with the care of collections, and to expend its resources in supplying the material, books, and specimens needed for original investigation by the Professors and students of Natural History in the University, to whom the Museum should furnish in addition, in part or in whole, the means of publication in its Bulletins and Memoirs. While we have no cause to regret the publications which have been issued in connection with the Museum, yet they do not represent sufficiently the original work done by the teaching staff of the University and their students. In addition, it should grant other specialists, properly qualified, all the facilities they may desire for the study of the Museum collections, consistent with their safety.

That this prospective analysis is not out of place will appear from the fact that, whenever the original plan of the Museum building is carried out, it does not provide for more room than is likely to be needed by the various laboratories of the special departments of Natural History established hereafter, together with such collections as, even with the most rigorous sifting, each will accumulate. The natural growth of comparative anatomy, ethnology, and archæology, and of the geological, geographical, and other biological departments, which will naturally centre in the Natural History square of the University, will tax its capacity to the utmost, if they have in the future a growth at all commensurate with that of these departments up to the present time.

ALEXANDER AGASSIZ.

Cambridge, October 1, 1884.

APPENDIX.

I.

RESIGNATIONS.

James Bradley Thayer, Royall Professor of Law, October 8, 1883.
John Chipman Gray, Story Professor of Law, November 12, 1883.
Francis H. Williams, Instructor in Ophthalmology, November 26, 1883.
Edward Cornelius Briggs, Clinical Instructor in Operative Dentistry, November 26, 1883.
Joseph Henry Thayer, Fellow of the Corporation, May 21, 1883.
Herbert Morison Clarke, Proctor, August 31, 1884.
Louis May Greeley, Proctor, August 31, 1884.
Edward Southworth Hawes, Proctor, August 31, 1884.
Julian Clifford Jaynes, Proctor, August 31, 1884.
Charles Austin Hobbs, Proctor, August 31, 1884.
Joseph Henry Beale, Proctor, August 31, 1884.
John Downer Pennock, Proctor, August 31, 1884.
Daniel Appleton White, Proctor, August 31, 1884.
Sereno Watson, Instructor in Phytography, September 23, 1884.

II.

APPOINTMENTS.

[UNLIMITED, OR FOR TERMS LONGER THAN ONE YEAR.]

William Crowninshield Endicott, to be Fellow of the Corporation, May 28, 1884.

James Bradley Thayer, to be Professor of Law, October 8, 1883.
John Chipman Gray, to be Royall Professor of Law, November 12, 1883.
Edward Laurens Mark, to be Assistant Professor of Zoölogy for five years from September 1, 1883, November 12, 1883.
William Fiske Whitney, to be Secretary of the Medical Faculty, November 26, 1883.
John Williams White, to be Professor of Greek, February 11, 1884.
William Barker Hills, to be Assistant Professor of Chemistry for five years from September 1, 1884, February 11, 1884.
Edward Stevens Sheldon, to be Assistant Professor of Romance Philology for five years from September 1, 1884, April 14, 1884.
Joseph Henry Thayer, to be Bussey Professor of New Testament Criticism and Interpretation, April 28, 1884.

Dudley Allen Sargent, to be Assistant Professor of Physical Training and Director of the Hemenway Gymnasium for five years from September 1, 1884, April 28, 1884.

Robert Thaxter Edes, to be Jackson Professor of Clinical Medicine, April 28, 1884.

Joseph Lovering, to be Director of the Jefferson Physical Laboratory, May 5, 1884.

Edward Newton Whittier, to be Assistant Professor of Clinical Medicine for five years from September 1, 1884, May 21, 1884.

Frank Winthrop Draper, to be Assistant Professor of Legal Medicine for five years from September 1, 1884, May 21, 1884.

Henry Barker Hill, to be Professor of Chemistry, September 23, 1884.

Henry Preble to be Tutor in Greek and Latin for three years from September 1, 1884, September 23, 1884.

Edward Cornelius Briggs, to be Instructor in Dental Materia Medica for three years from September 1, 1884, April 28, 1884.

Charles Wilson, to be Instructor in Orthodontia for three years from September 1, 1884, April 28, 1884.

George Franklin Grant, to be Instructor in Treatment for Cleft Palate and Cognate Diseases for three years from September 1, 1884, April 28, 1884.

Andrew Woods, to be Proctor, October 8, 1883.

Louis May Greeley, to be Proctor, October, 8, 1883.

Daniel Appleton White, to be Proctor, October 8, 1883.

Charles Armstrong Snow, to be Proctor, October 31, 1883.

Joseph Henry Beale, to be Proctor, October 31, 1883.

Arthur Prescott Lothrop, to be Proctor, February 11, 1884.

Luther Atwood, to be Proctor, April 14, 1884.

Jacob Cansler Patton, to be Proctor, September 23, 1884.

[FOR ONE YEAR OR LESS.]

For 1883-84.

Guillaume Alexandre Louis Scribner, to be Instructor in French, October 8, 1883.

Henry Parker Quincy, to be Instructor in Histology, October 8, 1883.

Charles Sedgwick Minot, to be Instructor in Histology and Embryology, October 8, 1883.

William Branford Shubrick Clymer, to be Instructor in English and President's Secretary, November 12, 1883.

Samuel Holmes Durgin, to be Instructor on Hygiene, November 12, 1883.

Francis Henry Williams, to be Instructor in Ophthalmology, November 12, 1883.

Edward Cornelius Briggs, to be Instructor in Materia Medica, November 12, 1883.

Eben Francis Whitman, to be Clinical Instructor in Operative Dentistry, November 12, 1883.

Charles Joseph Hubbard, to be Secretary, November 12, 1883.

Clarence Alonzo Cheever, to be Demonstrator of Anatomy, November 26, 1883.

Charles Herbert Williams, to be Instructor in Ophthalmology, November 26, 1883.

Henry Barton Jacobs, to be Assistant in Botany, October 8, 1883.

James Newton Garratt, to be Assistant in Organic Chemistry, October 31, 1883.

Maurice Howe Richardson, to be Assistant in Surgery, December 10, 1883.

Charles Montraville Green, to be Assistant in Obstetrics, January 14, 1884.

For 1884–85.

Josiah Royce, to be Instructor in Philosophy and Forensics, March 31, 1884.

Adolphe Cohn, to be Instructor in French, March 31, 1884.

Harold Whiting, to be Instructor in Physics, March 31, 1884.

Frank William Taussig, to be Instructor in Political Economy, March 31, 1884.

Albert Bushnell Hart, to be Instructor in American History, March 31, 1884.

Henry Dixon Jones, to be Instructor in Elocution, March 31, 1884.

Edward Channing, to be Instructor in History, March 31, 1884.

Kuno Francke, to be Instructor in German, April 14, 1884.

Arthur Richmond Marsh, to be Lecturer on Ancient Art, April 14, 1884.

Oliver Whipple Huntington, to be Instructor in Mineralogy, April 14, 1884.

Henry Edwards Scott, to be Instructor in History, June 9, 1884.

Charles Joseph Hubbard, to be Secretary, September 23, 1884.

Robert E. Thompson, to be Lecturer on Protective Tariffs, September 23, 1884.

Edwin L. Godkin, to be Lecturer on Free Trade, September 23, 1884.

Lewis Edwards Gates, to be Assistant in Forensics, May 5, 1884.

Henry Barton Jacobs, to be Assistant in Botany, May 5, 1884.

Robert Tracy Jackson, to be Assistant in Geology, May 5, 1884.

William Whiting Nolen, to be Assistant in Biology, May 5, 1884.

Samuel Van Eps Young, to be Assistant in Chemistry, June 16, 1884.

Joseph Weatherhead Warren, to be Instructor in Oral Pathology and Anatomy, April 28, 1884.

John Homans, to be Clinical Instructor in Diagnosis and Treatment of Ovarian Tumors, June 16, 1884.

Francis Boott Greenough, to be Clinical Instructor in Syphilis, June 16, 1884.

Oliver Fairfield Wadsworth, to be Clinical Instructor in Ophthalmoscopy, June 16, 1884.

Samuel Gilbert Webber, to be Clinical Instructor in Diseases of the Nervous System, June 16, 1884.

Clarence John Blake, to be Clinical Instructor in Otology, June 16, 1884.

JOHN ORNE GREEN, to be Clinical Instructor in Otology, June 16, 1884.

JAMES READ CHADWICK, to be Clinical Instructor in Diseases of Women, June 16, 1884.

ABNER POST, to be Clinical Instructor in Syphilis, June 16, 1884.

JAMES JACKSON PUTNAM, to be Clinical Instructor in Diseases of the Nervous System, June 16, 1884.

JOSEPH PEARSON OLIVER, to be Clinical Instructor in Diseases of Children, June 16, 1884.

THOMAS MORGAN ROTCH, to be Clinical Instructor in Diseases of Children, June 16, 1884.

THEODORE WILLIS FISHER, to be Clinical Instructor in Mental Diseases, June 16, 1884.

ELBRIDGE GERRY CUTLER, to be Clinical Instructor in Auscultation, June 16, 1884.

WILLIAM WHITWORTH GANNETT, to be Clinical Instructor in Auscultation, June 16, 1884.

SAMUEL HOLMES DURGIN, to be Lecturer on Hygiene, June 16, 1884.

CHARLES SEDGWICK MINOT, to be Instructor in Histology and Embryology, June 16, 1884.

HENRY PARKER QUINCY, to be Instructor in Histology, June 16, 1884.

FREDERICK CHEEVER SHATTUCK, to be Instructor in the Theory and Practice of Physic, June 16, 1884.

FRANCIS HENRY WILLIAMS, to be Instructor in Materia Medica, June 23, 1884.

JOSEPH WEATHERHEAD WARREN, to be Instructor in Experimental Therapeutics, June 23, 1884.

FRANKLIN DEXTER, to be Instructor in Histology, June 23, 1884.

JOSEPH ELLSWORTH WAITT, to be Demonstrator in Mechanical and Operative Dentistry, April 28, 1884.

HORATIO COOK MERRIAM, to be Clinical Instructor in the Dental School, May 21, 1884.

EBEN FRANCIS WHITMAN, to be Clinical Instructor in the Dental School, May 21, 1884.

ALLSTON GRAY BOUVÉ, to be Clinical Instructor in the Dental School, May 21, 1884.

FRANK PERRIN, to be Clinical Instructor in the Dental School, May 21, 1884.

DANIEL FRANK WHITTEN, to be Clinical Instructor in the Dental School, May 21, 1884.

EDWARD HICKLING BRADFORD, to be Assistant in Clinical Surgery, June 16, 1884.

CHARLES MONTRAVILLE GREEN, to be Assistant in Obstetrics, June 16, 1884.

FRANCIS HENRY DAVENPORT, to be Assistant in Gynaecology, June 16. 1884.

GEORGE MINOT GARLAND, to be Assistant in Clinical Medicine, June 16, 1884.

WILLIAM WHITWORTH GANNETT, to be Assistant in Pathological Anatomy, June 16, 1884.

WILLIAM CARROLL EMERSON, to be Assistant in Chemistry, June 16, 1884.

SAMUEL JASON MIXTER, to be Assistant in Anatomy, June 16, 1884.

CHARLES HARRINGTON, to be Assistant in Chemistry, June 16, 1884.

Francis Augustine Harris, to be Demonstrator of Medico-Legal Examinations, June 16, 1884.

George Webb West, to be Demonstrator of Bandaging and Apparatus, June 16, 1884.

Joseph Weatherhead Warren, to be Assistant in Physiology, June 23, 1884.

Walter Joseph Otis, to be Assistant in Operative Surgery, June 23, 1884.

Samuel Jason Mixter, to be Assistant Demonstrator of Anatomy, June 23, 1884.

Edward Hale, to be Proctor of Divinity Hall, June 16, 1884.

Horace Leslie Wheeler, to be Librarian of the Divinity School, June 16, 1884.

Henry J. Bigelow, **Thomas G. Appleton**, **William Gray**, to be Trustees of the Museum of Fine Arts, November 12, 1883.

Henry Lee, to be Trustee of the Museum of Fine Arts, June 9, 1884.

Gustavus Hay, **Robert T. Edes**, **Samuel G. Webber**, **Henry P. Bowditch**, **J. Collins Warren**, **Edward S. Wood**, **Francis W. Draper**, **William F. Whitney**, **Francis H. Williams**, to be members of the Committee on the Boylston Medical Prizes, November 12, 1883.

III.

March 27, 1850.

To the President and Faculty of Harvard College:

I earnestly protest against the adoption of the measures proposed at the Faculty meeting of the 25th inst. by the joint Committee of the Corporation and the Faculty, because I regard them as equivalent to a total rejection of the elective system.

I believe that the abandonment of the elective system will be a deplorable event in the history of the College, as it will be lamentable to the cause of sound education. I believe that this step is wholly adverse to the liberal spirit of the age and country, and that it will contract the system of College education more closely than it is restricted in any other country.

By this step the students will be excluded from all opportunity of developing those peculiarities and diversities of talent which have been bestowed upon them by the highest wisdom, and which are necessary to the perfect organization of society.

And, finally, by this step the College will be drained of a principle of life, which has for several years been flowing through its system, and has imparted an active spirit and a healthy enthusiasm to the labors both of the pupil and the teacher.

Very Respectfully,

[signed] BENJAMIN PEIRCE.

IV. STUDENTS NOT CANDIDATES FOR A DEGREE, 1884–1828.

	1884.	1883.	1882.	1881.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1865.	1864.	1863.	1860.
Resident A.B.s (not candidates for a degree)*	12	14	4	3	2	3	6	8													
Resident B.D.s	6	3	4	4																	
Resident M.D.s	3	11	10	8	7	5	4	7	8	4	6	4	8								
Resident LL.B.s							7	13	6	2	3	5	5								
Special Students	70	67	46																		
Unmatriculated Students				34	15	15	15	13	5												
Special Divinity Students	6	7	6	9	7	4	1	4	2	3	4	2	9	9	6	3					
Special Law Students	26	27	19	29	29	38	42	26													
Special Medical Students												10									
Special Scientific Students	13	13	11	17	26	7	4	7	7												
Special Veterinary Students	2																				
Astronomical Students																	3	1	1	1	1
Attending University Lectures†														26	155	13					
Attending Summer Courses	28	40	33	27	44	70	51	70	59	99	45										
Teachers' Course					1																
Total	166	182	133	131	131	142	130	148	89	108	58	21	22	35	161	16	3	1	1	1	1

	1855.	1849.	1848.	1847.	1846.	1845.	1844.	1843.	1842.	1841.	1840.	1839.	1838.	1835.	1834.	1833.	1832.	1831.	1830.	1829.	1828.
Special Students in Chemistry and Mathematics		38	16	5																	
Astronomical Students	2																				
University Students				2	3	6	2	6	4	7	3	2	1								
Students not candidates for a degree														2	3	3	2	1	1	5	5
Special Divinity Students																				2	

---

* Provided for by statute until 1877.

† Not enumerated until 1869.

V.

NUMBER OF TEACHERS AND STUDENTS IN THE DIVINITY SCHOOL, 1855–1885.

YEAR.	Professors.	Non-resident Professors.	Other Instructors.	Students.	YEAR.	Professors.	Non-resident Professors.	Other Instructors.	Students.
1855–56	2			14	1870–71	3	2		37
1856–57	2			22	1871–72	3	1	2	30
1857–58	2	2		17	1872–73	4		2	20
1858–59	2	2		23	1873–74	4		2 *	22
1859–60	2	2		21	1874–75	4		1 *	20
1860–61	2	2		23	1875–76	4		2 †	19
1861–62	2	2		18	1876–77	3 ‡		5 *	23
1862–63	2			17	1877–78	4		3	21
1863–64	2	1		20	1878–79	3		2	23
1864–65	2	1		17	1879–80	3		3	23
1865–66	2	1		14	1880–81	8		3	23
1866–67	2	1		15	1881–82	4		2	29
1867–68	2	2		23	1882–83	6		1	27
1868–69	1	2		19	1883–84	6			21
1869–70	3	2		36	1884–85	6		1	26

* One College professor who gave part of his time to the Divinity School is here counted as an instructor.

† Two College professors who gave part of their time to the Divinity School.

‡ One of the four professors was absent.

VI.

UNENDOWED PROFESSORSHIPS, 1885.

A professorship of English.
" " " the History of Art.
" " " political economy.
" " " modern languages.
" " " history.
Two professorships of mathematics.
The Librarianship.
Two professorships of Latin.
A professorship of Italian and Spanish.
" " " music.
A professorship of botany.
" " " palæontology.
" " " classical philology.
" " " philosophy.
" " " physics.
" " " cryptogamic botany.
Two professorships of chemistry.
A professorship of Greek.
" " " Sanscrit.

VII.

SUMMARY OF STUDENTS IN THE UNIVERSITY AT THE BEGINNING OF THE ACADEMIC YEAR 1883–1884.

College		
Seniors	209	
Juniors	195	
Sophomores	248	
Freshmen	253	
Special Students	67	
		972
Divinity School		21
Law School		146
Lawrence Scientific School		26
Medical School		243
Dental School		30
Bussey Institution		3
School of Veterinary Medicine		9
Candidates for Higher Degrees		54
Holders of Fellowships		8
Resident Graduates not Candidates for a Degree		14
		1526

Persons who attended the Summer Courses in Science in 1884.

Chemistry	25
Botany	8
	28

Number of Certificates issued to Women in 1884.

Final Examination	6

VIII.

ACADEMIC HONORS FOR THE YEAR 1883–1884.

COMMENCEMENT, JUNE 20, 1884.

Orations.

LEWIS EDWARD GATES,
JAMES RICHARD JEWETT,
GEORGE ANDREW STEWART,
WILLIAM WHITING NOLEN,
FREDERICK STORY BUNKER,
WALTER PERRY JOHNSON,
AUTHUR GILLESPIE HATCH,
JOSIAH BRIDGE,
HARRY HUBBARD,
JOHN ULRIC NEF,
HOLLIS WEBSTER,
WILLIAM AMORY GARDNER,
ERNEST LEE CONANT,
WILLIAM WALLACE FENN,
THEODORE LONGFELLOW FROTHINGHAM.
CHARLES FRANCIS AIKEN,
RICHARD ALEXANDER FULLERTON PENROSE,
CHARLES ROBERT SAUNDERS,
CLIFT ROGERS CLAPP,
GEORGE WILLIAM SAWIN,
JOSEPH ARTHUR WILLIS GOODSPEED,
EDWARD STAPLES DROWN.

Dissertations.

Gilbert Norris Jones,
John Prentiss,
Henry Conrad Bierwirth,
Correa Moylan Walsh,
Allen Curtis,
Frank Abram Harrington,
George William Brown,
Edward Haskell Lounsbury,
Thomas Aloysius Mullen,
Eugene Hamlin Hatch,
Albert Sanborn Perkins,
Hartley Frederick Atwood,
Edwin Martin Pickop,
Romeo Green Brown,
Edward Andress Hibbard,
Thomas Jefferson Coolidge,
Henry Trail,
John Wells Morss,
William Codman Sturgis,
Edwin Upshur Berryman,
William Logan Rodman Gifford,
Joseph Ambrose Cogan,
Benjamin Edward Bates,
Frederick Homer Darling,
Edward Wheeler Frost,
Bertram Ellis,
Thomas Stanley Simonds,
James Henry McIntosh,
Hardy Phippen,
Wallace Irving Keep,
Walter Brackett Lancaster,
Henry Julius Williams,
John Andrew Noonan,
Philip Henry Goepp,
Charles Bridge Davis,
Gerrit Elias Hambleton Weaver,
George Herbert Perkins,
Thaddeus William Harris,
Charles Calvin Ziegler,
Frederick Augustus Whitney,
Roger Faxton Sturgis,
William Orison Underwood,
Charles Eugene Hamlin.

Disquisitions.

John Thomas Nichols,
Horatio Nelson Glover,
Jesse Lowman,
William Franklin Dana,
George Dunning Moore,
Edward Lawrence Peirson,
Francis James Riley,
James Lee Mitchell,
William Woolsey Mumford,
Edward Ellis Allen,
Charles Theodore Greve,
John Worthington Dickinson,
Orrin Ford Hibbard,
Edward Arthur Stanley Clarke,
Lawrence Eugene Sexton,
William Tufts Crocker,
Simeon Mills Hayes,
Gordon Abbott,
Francis William Holmes,
Edwin Everett Jack,
Augustus Thorndike,
Jonh McDuffie,
Frank Gustine Pratt,
Greenough White,
Marcus White Frederick,
Henry Archibald Buerk,
Frazer Livingstone Montague,
William Allen Hayes,
Charles Merritt Field,
Addison Hamlin,
Paul Thorndike,
Silas Haynes Elliot,
William Dunlap Smith,
Samuel Atkins Eliot,
John Parker Holmes,
Henry Munson Spelman,
Thomas Mott Osborne,
Edward Appleton Bangs,
Robert Heberton Terrel,
James Macmaster Codman,
Charles William Baker,
Conrad John Rueter,
James Graham Gardiner,
Myron Preston Denton,
Loren Erskine Griswold,
Walter Currier Rose,
Thomas Rodman Plummer,
George Uriel Crocker,
Arthur Meeks Hawkins,
Brainard Alger Andrews,
Oscar Jonas Lowman,
William Sohier Bryant,
Henry Warren Bliss.

HONORS AT GRADUATION.

In Semitic Languages.

James Richard Jewett,	Highest Honors.

In Classics.

Josiah Bridge,	Highest Honors.
William Wallace Fenn,	Do.
William Amory Gardner,	Do.
George Andrew Stewart,	Do.
George William Brown,	Honors.
Thomas Aloysius Mullen,	Do.
Albert Sanborn Perkins,	Do.
Edwin Martin Pickop,	Do.
Thomas Stanley Simonds,	Do.
Correa Moylan Walsh,	Do.

In Philosophy.

Edward Staples Drown,	Highest Honors.
Lewis Edwards Gates,	Do.

In Political Science.

Clift Rogers Clapp,	Highest Honors.
Harry Hubbard,	Do.
Hartley Frederic Atwood,	Honors.
Theodore Longfellow Frothingham,	Do.
John Wells Morss,	Do.
John Prentiss,	Do.

In History.

Charles Robertson Saunders,	Highest Honors.
Thomas Jefferson Coolidge,	Honors.
Roger Faxton Sturgis,	Do.
Gerrit Elias Hambleton Weaver, A.B.	Do.

In Music.

Philip Henry Goepp,	Honors.
Charles Eugene Hamlin,	Do.

In Mathematics.

George William Sawin,	Highest Honors.
George Herbert Perkins,	Honors.

In Physics.

Joseph Arthur Willis Goodspeed,	Highest Honors.

In Chemistry.

John Ulric Nef,	Highest Honors.
Richard Alexander Fullerton Penrose,	Do.
Frederick Augustus Whitney,	Honors.

In Natural History.

Thaddeus William Harris,	Honors.
Walter Brackett Lancaster,	Do.
William Codman Sturgis,	Do.
William Orison Underwood,	Do.
Charles Calvin Ziegler, Ph.B.	Do.

HONORABLE MENTION AT GRADUATION.

Gordon Abbott. *Political Economy.*
Charles Francis Aiken. *Latin; French.*
Edward Ellis Allen. *Natural History.*
Brainard Alger Andrews. *Philosophy.*
Hartley Frederic Atwood. *English Composition; Political Economy; History.*
Charles William Baker. *Political Economy.*
Edward Appleton Bangs. *Natural History.*
Henry Elbert Barnes. *Greek.*
Benjamin Edward Bates. *Political Economy; Natural History.*
Edwin Upshur Berryman. *German.*
Heinrich Conrad Bierwirth. *English; English Composition; Philosophy.*
Henry Warren Bliss. *Natural History.*
Josiah Bridge. *Greek; Latin; English Composition.*
George William Brown. *Greek; Latin; English Composition; Political Economy.*
Romeo Green Brown. *English Composition; Philosophy; History.*
William Sohier Bryant. *Natural History.*
Harry Archibald Buerk. *Philosophy.*
Frederic Story Bunker. *Natural History.*
Clift Rogers Clapp. *English Composition; Political Economy; History.*
James Macmaster Codman. *Political Economy; History.*
Joseph Ambrose Cogan. *Natural History.*
Ernest Lee Conant. *English Composition; History.*
Thomas Jefferson Coolidge. *History.*
George Uriel Crocker. *Philosophy.*
Allen Curtis. *English Composition; German; History.*
William Franklin Dana. *English Composition; Political Economy; History.*
Frederick Homer Darling. *English Composition; History.*
Charles Bridge Davis. *Chemistry.*
Myron Preston Denton. *Natural History.*
John Worthington Dickinson. *Political Economy.*
Edward Staples Drown. *English Composition; Philosophy.*
Samuel Atkins Eliot. *English Composition; History.*
Silas Haynes Elliot. *Chemistry; Natural History.*
Bertram Ellis. *English Composition; History.*
William Wallace Fenn. *Greek; Latin; English Composition.*
Charles Merritt Field. *Chemistry.*
Marcus White Fredrick. *English Composition.*
Edward Wheeler Frost. *English Composition; German; History.*
Theodore Longfellow Frothingham. *English Composition; Political Economy; History.*
James Grahame Gardiner. *History.*
William Amory Gardner. *Greek; Latin; English Composition.*
Lewis Edwards Gates. *English; English Composition; Philosophy.*
William Logan Rodman Gifford. *Political Economy; History.*
Horatio Nelson Glover. *Political Economy; History.*
Philip Henry Goepp. *Music.*

Joseph Arthur Willis Goodspeed. *Mathematics; Physics.*
Charles Theodore Greve. *Latin.*
Loren Erskine Griswold. *English Composition; History.*
Addison Hamlin. *Chemistry.*
Charles Eugene Hamlin. *Music.*
Frank Abram Harrington. *Chemistry; Natural History.*
Thaddeus William Harris. *English Composition; Natural History.*
Arthur Gillespie Hatch. *English; English Composition.*
Eugene Hamlin Hatch. *English Composition; Philosophy.*
Arthur Meeks Hawkins. *English Composition; Philosophy; History.*
Simeon Mills Hayes. *English Composition; Philosophy.*
William Allen Hayes. *English Composition; History.*
Edward Andress Hibbard. *English Composition; Political Economy; History.*
Omri Ford Hibbard. *History.*
Frank William Holmes. *Semitic Languages.*
John Parker Holmes. *Natural History.*
Harry Hubbard. *English Composition; Political Economy; History.*
James Richard Jewett. *Semitic Languages.*
Walter Perry Johnson. *English Composition; Political Economy; History; Natural History.*
Gilbert Norris Jones. *English Composition; Natural History.*
Walter Brackett Lancaster. *Natural History.*
Edward Haskell Lounsbury. *English Composition.*
Jesse Lowman. *Philosophy; Political Economy; History.*
Oscar Jonas Lowman. *German; Chemistry.*
John McDuffie. *English Composition; Political Economy.*
James Henry McIntosh. *English Composition; Political Economy; History.*
William Lenhart McPherson. *Philosophy.*
Robert Shaw Minturn. *English Composition.*
James Lee Mitchell. *Mathematics.*
Frazer Livingston Montague. *English Composition; Fine Arts.*
George Dunning Moore. *Chemistry.*
John Wells Morss. *English Composition; Political Economy; History.*
Thomas Aloysius Mullen. *Greek; Latin.*
John Ulric Nef. *English Composition; Chemistry.*
John Thomas Nichols. *Philosophy.*
William Whiting Nolen. *English Composition; Natural History.*
John Andrew Noonan. *Political Economy.*
Thomas Mott Osborne. *History, Music.*
Richard Alexander Fullerton Penrose. *Chemistry; Natural History.*
Albert Sanborn Perkins. *Greek; Latin; English Composition.*
George Herbert Perkins. *Mathematics.*
Edwin Martin Pickop. *Greek; Latin; English Composition.*
Thomas Rodman Plummer. *Fine Arts.*
Frank Gustine Pratt. *Physics.*
John Prentiss. *Political Economy; History.*
Walter Currier Rose. *Greek.*
Conrad John Rueter. *English Composition.*
Charles Robertson Saunders. *English Composition; Political Economy; History.*

George William Sawin. *English Composition; Mathematics.*
Lawrence Eugene Sexton. *English Composition.*
Thomas Stanley Simonds. *Greek; Latin; English Composition.*
William Dunlap Smith. *Philosophy.*
Henry Munson Spelman. *Natural History.*
George Andrew Stewart. *Greek; Latin; English Composition; Mathematics.*
William Codman Sturgis. *English Composition; Natural History.*
Roger Faxton Sturgis. *History.*
Robert Heberton Terrell. *Greek.*
Augustus Thorndike. *Natural History.*
Paul Thorndike. *Natural History.*
Henry Traill. *Chemistry.*
William Orison Underwood. *Natural History.*
John Baldwin Walker. *Natural History.*
Correa Moylan Walsh. *Greek; Latin; English Composition.*
Gerrit Elias Hambleton Weaver. *History.*
Hollis Webster. *English Composition; Natural History.*
Greenough White. *English.*
Frederick Augustus Whitney. *Chemistry.*
Henry Jules Williams. *English Composition; Chemistry.*
Charles Calvin Ziegler. *English Composition; Natural History.*

SECOND-YEAR HONORS.

In Classics.

Sophomores:

George Rice Carpenter,	Highest Honors.
George Edwin Howes,	Do.
William Fogg Osgood,	Do.
Joseph Newell Palmer,	Do.
Edmund Nathaniel Snyder,	Do.
Frederick Learned Torrey,	Do.
Walter Thomas Clark,	Honors.
William Morton Fullerton,	Do.
Henry Arnold Henshaw,	Do.
Alfred Henry Lloyd,	Do.
Herbert Lyman,	Do.
Eben Richards,	Do.
George Blanchard Stevens,	Do.

In Mathematics.

Juniors:

Edward Irving Smith,	Highest Honors.

Sophomores:

Selwyn Lewis Harding,	Highest Honors.
Herbert Bacon Hutchins,	Honors.
Robert Fletcher Rogers,	Do.
William Abbott Stone,	Do.

IX.

PRIZES.

DETURS.

The following students received books, called "Deturs," from the foundation of Edward Hopkins, for excellence in scholarship:—

Freshmen of 1882–83.

Daniel William Shea,
Charles Ruel Fletcher.

Freshmen of 1883–84.

George Pope Furber,
Stephen Berxieu Stanton,
Homer Worthington Brainerd,
Edgar Buckingham,
Joseph Eugene Walker,
Charles Francis Adams Currier,
Joseph Brown Thomas Tuthill,
Albertus True Dudley,
William Collins Herron,
Timothy Currier Craig,
Frank Chester Southworth,
Edgar Judson Rich,
Frederic Hubbell Marvin,
Linn Luce,
Theodore Cramer Von Storh,
Walter Samuel Pinkham,
Robert Warner Frost,
Henry Schofield,
Augustus Story Haskell,
Frederick Harold Bailey,
Roger Wolcott Keep,
Frank Henry Stanyan,
Livingston Boyd Stedman,
William Jackson Bowen,
Royal Robbins,
Myron Augustus Lochman,
John Newmarch Cushing,
Harry Ernest Peabody.

BOWDOIN PRIZES.

I.

John Farwell Moors, A.M. 1884.
Herbert Morison Clarke, Ph.D. 1884.
James Newton Garratt, A.M. 1884.

II.

Edward Wheeler Frost, of the Class of 1884.
Harry Hubbard, of the Class of 1884.
Lewis Edwards Gates, of the Class of 1884.

III. *a*.

Charles Bertie Gleason, of the Class of 1885.

III. *b*.

Correa Moylan Walsh, of the Class of 1884.

IV.

Hugh Henry Brogan, of the Class of 1885.
Charles Alexander Whittemore, of the Class of 1885.

BOYLSTON PRIZES FOR ELOCUTION.

First Prizes.

Samuel Atkins Eliot, of the Class of 1884.
John Parker Holmes, of the Class of 1884.

Second Prizes.

Henry Elbert Barnes, of the Class of 1884.
Barton Bee Ramage, of the Class of 1884.
Irvah Lester Winter, of the Class of 1885.

X.

DEGREES.

Bachelors of Arts of the Class of 1884	195
Bachelor of Arts of former Class	1
Bachelors of Divinity	3
Bachelors of Law	24
Doctors of Medicine	57
Doctors of Dental Medicine	10
Bachelor of Science	1
Civil Engineer	1
Doctors of Philosophy	5
Doctor of Science	1
Masters of Arts	24

HONORARY DEGREES.

Doctors of Laws.

Francis James Child,
James Russell Lowell,
Richard Claverhouse Jebb,
Simon Newcomb.

Doctor of Divinity.

John Farwell Moors.
Joseph Henry Thayer.

Master of Arts.

William Greene Binney.

XI.

COMMITTEES OF THE OVERSEERS FOR 1884.

To visit the University.

President of the Board of Overseers.
His Excellency the Governor.
His Honor the Lieutenant-Governor.
The President of the Senate.
The Speaker of the House of Representatives.
The Secretary of the Board of Education.
The Secretary of the Board of Overseers.
The Chairman of each of the Visiting Committees.

To visit the College. — *On Government.*

Charles R. Codman,
Andrew P. Peabody,
E. E. Hale,
Leverett Saltonstall,
J. T. G. Nichols,
Le Baron Russell,
John Fiske,
Samuel A. Green,
Richard M. Hodges,
John T. Morse, Jr.,
Edwin P. Seaver,
Theodore Lyman,
John Noble,
Waldo Higginson,
Moorfield Storey,
Solomon Lincoln.

To visit the College. — *On Languages.*

Le Baron Russell,
William J. Rolfe,
Robert E. Babson,
Carl Wolff,
O. B. Frothingham,
Francis A. Waterhouse,
John Holmes,
Henry W. Haynes,
Robert D. Smith,
Joaquin M. Torrijo,
John Noble,
Robert Shaw Sturgis,
Charles P. Curtis,
Francis Boott,
Lucius H. Buckingham,
Thomas Cushing,
Horatio G. Curtis,
Francis Peabody, Jr.,
William T. Harris.

To visit the College. — *On Rhetoric and English Literature.*

Moorfield Storey,
George B. Chase,
Henry W. Foote,
Josiah Quincy, Jr.,
Charles R. Codman,
Roger Wolcott,
Charles P. Curtis.

To visit the College. — *On History and Political Science.*

John Fiske,
Alexander McKenzie,
Henry C. Lodge,
John O. Means,
Russell Gray,
Brooks Adams,
John T. Morse, Jr.,
William P. Atkinson,
Edward G. Porter,
James H. Means,
Abbott Lawrence.

To visit the College. — On Philosophy.

Andrew P. Peabody,
William C. Endicott,
John O. Means,
Alexander McKenzie,
Joseph B. Warner,
John Fiske.

To visit the College. — On Mathematics, Physics, and Chemistry.

Edwin P. Seaver,
William Watson,
J. D. Runkle,
E. D. Leavitt, Jr.,
Oliver F. Wadsworth,
Robert Amory,
Daniel B. Hagar,
George V. Leverett,
Channing Whitaker,
Francis Blake, Jr.,
Walter C. Cabot,
George R. Briggs.

To visit the College. — On Natural History.

Samuel A. Green,
Theodore Lyman,
R. Pumpelly,
Alpheus Packard, Jr.,
W. F. Whitney,
William H. Niles.

To visit the College. — On Fine Arts and Music.

Leverett Saltonstall,
S. L. Thorndike,
William F. Apthorp,
Charles A. Cummings,
W. P. P. Longfellow,
Charles C. Perkins,
John S. Dwight,
Charles G. Loring,
J. Francis Tuckerman,
Robert A. Boit,
Arthur Rotch,
Frederick Crowninshield.

To visit the Divinity School.

E. E. Hale,
Phillips Brooks,
Edward H. Hall,
Lysander Dickerman,
Francis B. Hornbrooke,
Franklin Johnson,
Henry W. Foote,
Thomas Hill,
F. W. Holland,
James F. Clarke,
Alexander McKenzie,
Artemas B. Muzzey,
Waldo Higginson,
Charles F. Dole,
Arthur Brooks.

To visit the Law School.

William G. Russell,
Leverett Saltonstall,
Darwin E. Ware,
Robert D. Smith,
Solomon Lincoln,
Francis C. Barlow,
Charles C. Beaman, Jr.,
John Lowell,
George O. Shattuck,
William C. Endicott,
Francis E. Parker,
Robert M. Morse, Jr.,
Peter B. Olney,
Edmund Wetmore.

To visit the Scientific School, the Bussey Institution, the Peabody Museum of American Archæology and Ethnology, and the Museum of Comparative Zoölogy.

Morrill Wyman,
R. M. Hodges,
John O. Sargent,
Robert W. Hooper,
Francis M. Weld,
Charles O. Thompson,
Alphonse Fteley,
Ernest W. Bowditch,
Thomas C. Clark,
Theodore Lyman,
Henry P. Kidder,
Abbott Lawrence,
Channing Whitaker,
T. J. Coolidge,
Clemens Herschel,
S. M. Felton.

To visit the Medical and Dental Schools.

Le Baron Russell,
Richard M. Hodges,
Alfred Hosmer,
George C. Shattuck,
Samuel L. Abbott,
Algernon Coolidge,
W. W. Wellington,
Morrill Wyman,
Samuel A. Green,
Frederic Winsor,
Hall Curtis,
Francis M. Weld,
John C. Dalton.

To visit the Observatory.

James F. Clarke,
William Amory,
J. Ingersoll Bowditch,
George I. Alden,
Robert C. Winthrop,
Alvan Clark,
Augustus Lowell,
Simon Newcomb,
Charles R. Codman,
Amos A. Lawrence,
John C. Palfrey,
Robert T. Paine,
T. J. Coolidge,
Charles F. Choate,
Frederick O. Prince,
J. Montgomery Sears,
F. H. Peabody.

To visit the Library.

Phillips Brooks,
Samuel A. Green,
John Fiske,
John O. Sargent,
Charles A. Cutter,
Charles C. Smith,
Stephen Salisbury, Jr.,
Francis V. Balch,
Charles Deane,
Mellen Chamberlain,
Samuel S. Green,
John M. Brown,
John T. Morse, Jr.,
William W. Greenough,
George W. Wales,
Samuel Eliot,
Henry G. Denny,
Henry F. Jenks,
Robert Grant,
George Dexter,
Charles F. Adams, Jr.

To visit the Botanic Garden and Herbarium.

Henry Lee,
William Boott,
William Gray, Jr.,
H. H. Hunnewell,
Francis A. Osborne,
Henry P. Wolcott,
Henry C. Lodge,
Thomas Meehan,
Frederick L. Ames,
John Cummings,
Augustus Lowell,
J. Warren Merrill,
John C. Phillips,
J. Pierpont Morgan.

On Treasurer's Accounts.

Henry P. Kidder,
Charles H. Parker,
George B. Chase,
Amos A. Lawrence,
Israel M. Spelman,
Solomon Lincoln.

On Elections.

Charles R. Codman,
John Lowell,
Leverett Saltonstall,
Moorfield Storey,
William G. Russell.

On Reports and Resolutions.

Robert D. Smith,
Solomon Lincoln,
Francis E. Parker,
Charles Francis Adams, Jr.,
Robert M. Morse, Jr.,
Henry Lee.

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TREASURER'S STATEMENT.

SIGILLVM ACADEMIÆ HARVARDIANÆ IN NOV ANG

1884.

TREASURER'S STATEMENT.

To the Board of Overseers of Harvard College:—

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending August 31, 1884, in the usual form.

The Funds separately invested, with the income thereof, are as follows: —

	Principal.	Income.
UNIVERSITY.		
George B. Dorr Fund (part of),		
50 " Pittsb'g, Ft. Wayne & Chic. R. R. Co.,	sold during the year	$87.50
100 " New York & Harlem R. R. Co.,		
187 " Pennsylvania Coal Co.,	$25,525.50	1,870.00
COLLEGE.		
Stoughton Scholarship (part of),		
Real Estate in Dorchester,	1,294.30	none
Pennoyer Scholarships (part of),		
Pennoyer Annuity in England,	4,444.44	277.50
Rumford Professorship (part of),		
French Rentes,	10,000.00	581.07
Jonathan Phillips Fund,		
Mortgage,	10,000.00	500.00
Daniel H. Peirce Fund (part of),		
Mortgage,	12,894.89	641.54
Samuel Ward's Gift,		
Ward's (Bumkin) Island, Boston Harbor,	1,200.00	50.00
LIBRARY.		
Charles Minot Fund (part of),		
$60,000, Buffalo, Bradford, & Pittsb. R. R. Bonds,	60,000.00	4,200.00
Ichabod Tucker Fund (part of),		
Policy of Mass. Hospital Life Insurance Co.,	5,000.00	200.00
SCIENTIFIC SCHOOL.		
John B. Barringer Fund (part of),		
40 shares Schenectady Bank Stock,	2,200.00	200.00
Amounts carried forward,	$132,559.13	$8,607.61

Amounts brought forward,	$132,559.13	$8,607.61
MEDICAL SCHOOL.		
Edward M. Barringer Fund (part of),		
10 shares Schenectady Bank Stock, ...	600.00	50.00
MUSEUM OF COMPARATIVE ZOÖLOGY.		
Agassiz Memorial Fund (part of),		
Personal notes (endorsed), ...	34,074.18	1,039.02
OBSERVATORY.		
Anonymous gift (now used to pay annuity),		
$1,000, Michigan South'n & No. Indiana R.R. Bond,	1,000.00	70.00
$2,000, Cincinnati Municipal Bonds, ...	2,000.00	140.00
$2,000 Minneapolis Municipal Bonds, ...	2,000.00	160.00
50 shares Pittsburg, Fort Wayne, & Chicago, R. R. Stock, ...	5,000.00	350.00
SPECIAL FUNDS.		
Bussey Trust,		
Real Estate, ...	413,092.80	17,576.98
Robert Troup Paine Fund (accumulating),		
$24,500 Mass. 5% Bonds, ...	28,107.50	1,196.39
New Law School Professorship (part of),		
Personal note, ...	70,000.00	4,500.00
Henry Harris Fund (part of),		
Real Estate (sold during the year), ...		190.42
Mortgages, ...	14,400.00	462.74
	$702,833.61	$34,343.16

The other Funds of the College are invested as a whole. The general investments, with the income thereof, are as follows: —

Investments.	Principal, September 1, 1883.	Principal, August 31, 1884.	Income.
Notes, Mortgages, &c., ...	$902,294.26	$558,230.11	$37,767.70
Railroad Bonds and Premiums, . .	1,063,636.42	1,545,277.66	67,633.70
Railroad Stock, ...	106,811.93	110,811.08	8,423.00
New Boston Coal Mining Co. Bonds,	9,000.00	9,000.00	350.00
Bank Stock, ...	63,964.00	63,964.00	4,549.76
Manufacturing Stock, ...	103,658.29	103,658.29	5,444.00
Real Estate, ...	1,408,192.42	1,418,017.42	78,009.11
Unoccupied Lands, ...	74,487.79	74,487.79	
Brattle Street Reversion, ...	1,000.00	1,000.00	
Advances to Scientific School, . . .	4,055.30	3,704.76	243.30
" " Dental School, ...	13,659.36	14,854.36	819.34
" " Bussey Trust, ...	40,266.13	40,266.13	2,013.30
" " Dining Hall Association,	34,732.16	33,232.16	2,063.93
" " Scudder's Catalogue, .	190.58		
" " Athletic Association, . .		1,000.00	
" " Observatory, ...		876.07	
Amounts carried forward,	$3,825,948.64	$3,978,379.83	$207,337.34

Amounts brought forward,	$3,825,948.64	$3,978,379.83	$207,337.34
Advances to School of Veterinary Medicine, ...		5,813.21	15.88
" Law School Building Fund,		7,431.07	128.94
" Bussey Institution, . . .		2,273.41	
Baring Brothers & Company, . . .		773.41	
Term Bills due Oct., 1884, ...	75,397.36	84,041.23	
Term Bills overdue, ...	2,697.77	2,623.16	
Cash in Suffolk National Bank, .	7,195.40	13,961.49	
Cash in hands of Bursar, ...	1,855.66	5,807.94	
Totals of general investments,	3,913,094.83	4,101,104.75	207,482.16
Totals of special investments,	710,800.74	702,833.61	34,343.16
Amounts, . . .	$4,623,895.57	$4,803,938.36	$241,825.32

During the year about $500,000 has been invested in railroad bonds, the money having come chiefly from mortgages and notes which were paid off and from new gifts. The account of "railroad bond premiums" has been charged with $75,212.50 for the premiums paid on $376,000 of seven per cent and ten per cent bonds bought, and it has been credited with $5710 which was taken from the income of $571,000 of seven per cent bonds which were held during the whole year. This account is also charged temporarily with $1373.74 for the difference between accrued interest advanced and that repaid during the year. A piece of vacant land on Townsend Street, Roxbury, taxed for 1884 on a valuation of $13,100, has been taken in settlement of a mortgage debt of $10,000 and accrued interest. All other changes in the investments of the University are sufficiently accounted for by the receipts and payments hereinafter stated in detail. The advances which have been made from the "general investments" to different departments of the University are considered to be secured by the Insurance and Guaranty Fund.

The net income of the general investments ($207,482.16) has been divided at the rate of $5\frac{17}{100}$ per cent among the Funds to which they belong, after allowing to the Physical Laboratory Building Fund a special rate of four per cent on its balance during the period of construction. The balance of $167.84 has been placed to the credit of the University account.

The rate of income compared with that for 1882–83 shows a falling off of $\frac{40}{100}$ of one per cent. A considerable falling off was expected, but it would not have been so large if the changes of investment during the year had not caused a temporary loss of income. Larger payments for insurance and repairs also caused a net loss of income from the productive real estate, in spite of an increased gross rent. If the property held for the "general investments" was not worth, as a whole, something more than its book valuation, the average rate of income could hardly be above five per cent at this time.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments: —

Interest on funds for		
University Salaries and Expenses,	$27,793.07	
College Expenses,	2,922.08	
Library,	5,964.40	
College Salaries,	27,726.24	
Gymnasium, and repairs on College buildings,	none.	
College Term bills,	178,927.38	
Sundry cash receipts,	17,727.33	
		261,060.50
Expended for		
University Salaries and Expenses,	$34,366.09	
College Expenses,	42,623.60	
Library Salaries and Expenses (not books),	24,941.96	
College Salaries,	143,761.85	
Gymnasium Expenses,	7,982.45	
Repairs and insurance on College Buildings not valued on Treasurer's books,	7,655.72	
		261,331.67
Balance, showing the deficit for the year, which has been charged to Stock Account,		$271.17

An increase in the number of undergraduates and the receipt during the year of income from new Funds, with more than a year's income from the new "Eben Wright Fund," have allowed a current expenditure for the University, College, and Library considerably greater than that of the previous year, in spite of the reduced rate of income from investments. A small deficit of $271.17 from these departments has been charged to the "Stock Account." For 1882–83 a surplus of $2713.27 was credited to the same account.

For the Divinity School the falling off of income from investments and increased outlays, chiefly for repairs and improvements, have caused a deficit of $1352.22, in spite of Mr. Hale's gift for books, of which only a part has yet been spent. For 1882–83 there was a surplus of $1322.59.

For the Law School largely increased current expenses, occasioned by the use of the new Austin Hall, have caused a deficit of $412.86, in spite of an increase in the number of students and in the amount of available income for the new professorship. For 1882–83 there was a deficit of $1674.46. The account for the building of Austin Hall could not be closed during the year, and the sum of $7431.07 was temporarily advanced from the "general investments" for the finishing and furnishing of the new building.

The income of the Medical School has been sufficient to provide for largely increased current expenses, which were chiefly due to the size and added accommodations of its new building. The cost of finishing and furnishing the building, in excess of the gifts therefor, has however caused a deficit of $17,934.63, which has been charged against the surplus of the School from previous years. For 1882–83 there was a surplus of $3562.20.

A large increase of outlays for the Dental School, chiefly for fitting up its new quarters in the old building of the Medical School and for salaries, has caused a deficit of $1195, in spite of an increase in the number of students. For 1882–83 there was a surplus of $829.01.

The Lawrence Scientific School has a surplus for the year of $350.54, which has been used to reduce the debt of the School. For 1882–83 the surplus was $651.97.

For the Museum of Comparative Zoölogy the balance of $1641.08 from the income of the Agassiz Memorial Fund has been used to repay in part the notes given by Mr. Agassiz to the Memorial Fund for advances on account of the extension of the Museum building. The private outlays of Mr. Agassiz for the benefit of the Museum have been very large for many years, amounting, with his public gifts to the Museum Funds and to other departments of the University, to more than half a million dollars during the past thirteen years.

For the Observatory, the income from the new endowment has been much less than the amount of the annual subscriptions for current use which were received for several years before. No reduction having been made during the year in the total current expenditure, there is a deficit of $3948.59, which has consumed the balance from the old subscriptions and made it necessary to borrow $876.07. This sum has been advanced from the "general investments." For 1882–83 there was a deficit of $2409.46, which was provided for out of the annual subscriptions paid in advance several years before. The subscriptions towards the new endowment now amount to $50,000, of which a small part is payable in instalments hereafter.

A falling off in the number of students at the Bussey Institution and largely increased expenses, chiefly in connection with farming operations and the care of animals, have caused a deficit of $2323.91, in spite of a somewhat larger income from the Bussey Trust, and considerable receipts for the care of animals. The deficit has used up the small balance from last year's account and made it necessary to borrow temporarily from the "general investments" $2273.41. For 1882–83 there was a deficit of $755.05, which was provided for out of the surplus of the previous year.

The Veterinary School has consumed all its cash receipts during the year and its balance from the previous year, including the gifts of the Massachusetts Society for Promoting Agriculture and of Mr. Higginson, and it has borrowed from the "general investments" $5813.21, chiefly on account of its new building in Boston. A considerable sum is still due to the School for services rendered at its Hospital. As the School cannot continue to borrow for its current expenditure, its collections must hereafter be more promptly made.

The Bussey stores have yielded during the year a larger gross return than during the year before, but nearly all the gain has been used up by large payments for insurance. For 1884–85 a change of tenants will cause temporarily a heavy loss of rent, which is not likely to be made up by any lessening of expenses.

Gifts have been received during the year as follows:—

TO FORM NEW FUNDS OR INCREASE OLD ONES.

From Edward Russell, $200, to increase the scholarship founded by him.

From an anonymous friend, $750, for the general fund of the Divinity School.

From the daughters of the late Seth Turner, $5000, for the interest of the College under his will, the income to be used for the general purposes of the University.

From the executors of Henry T. Morgan, of New York, $80,556.72, on account of his unrestricted bequest to the University.

From Mrs. C. M. Barnard, $600, as the first yearly payment for the support of two scholarships to be known as the Warren H. Cudworth Scholarships, for poor and meritorious students in Harvard College, whether candidates for a degree or not, suitable candidates from Lowell or East Boston to have the preference.

From Dr. Francis Minot, Secretary of the Class of 1841, $200, to increase the Class of 1841 Scholarship Fund.

Through Professor William E. Byerly, $500, "as the beginning of a fund to be known as the Chauncey Wright Fund, the income of which shall be devoted to the encouragement of the study of Mathematics in the University."

From Joseph H. Choate, $6000, to found a scholarship to be known as the "Ruluff Sterling Choate Scholarship."

From the executors of Thomas G. Appleton, $5000, for his bequest to the Astronomical Observatory.

From William Minot as executor of the will of Henry Harris, certain mortgages, undivided interests in real estate and cash, amounting to $29,939.33, one half of the income of which is to be credited to the Medical School for general purposes, and the other half to be credited to the University account.

The sum of $100,000 from the estate of the late Eben Wright was received during the year, for the foundation of the Eben Wright Fund, with accrued interest thereon amounting to $6888.89. For this gift the College is indebted to the good-will of Mr. T. Jefferson Coolidge, who wisely exercised his right to designate the use of the fund by providing that its income should be applied towards the cost of administration and service in the College Library.

From Alexander Agassiz, $1000, for the final instalment of his subscription for the increase of the Botanic Department Fund.

Subscriptions for the further endowment of the Divinity School, paid to Sept. 1, 1884, from

Rev. J. H. Allen	$40	Henry Lee	$300
Rev. H. W. Brown	100	Henry Lippitt	100
			$540

Subscriptions to be applied towards a fund for the endowment of the Dental School, paid to Sept. 1, 1884, from

Dr. George H. Ames	$20	Dr. A. B. Jewell	$20.
Dr. C. A. Brackett	20	Dr. H. C. Meriam	20.
Dr. E. P. Bradbury	20	Dr. F. A. Merrill	60.
Dr. E. C. Briggs	20	Dr. L. D. Shepard	20.
Dr. D. M. Clapp	20	Dr. S. S. Silva	20.
Dr. T. H. Chandler	60	Dr. E. H. Smith	20.
Dr. E. E. Frost	20	Dr. R. T. Stack	50.66
Dr. Thomas Fillebrown	20	Dr. J. G. W. Werner	20.
			$430.66

Subscriptions to be applied towards a fund for the endowment of the Observatory, paid to Sept. 1, 1884, from

T. W. Backhouse	$122.19	George Higginson	$1000.
Francis Blake	500.	H. H. Hunnewell	1000.
J. I. Bowditch	1000.	Amos A. Lawrence	500.
Martin Brimmer	500.	W. P. Mason	200.
Shepherd Brooks	500.	F. H. Peabody	100.
T. Q. Browne	100.	O. W. Peabody	250.
John A. Burnham	1000.	Prof. E. C. Pickering	200.
Charles F. Choate	500.	Henry B. Rogers	1000.
Alexander Cochrane	200.	Stephen Salisbury	2000.
Chas. P. Curtis	500.	Nathaniel Thayer	5000.
Wm. Endicott, Jr.	2000.	Miss Anne Wigglesworth	200.
J. M. Forbes	1000.	R. C. Winthrop	250.
R. C. Greenleaf	500.	R. C. Winthrop, Jr.	100.
Mrs. M. Hemenway	2000.		$22,222.19

In order to increase the salary of the President of Harvard College subscriptions towards a fund have been paid to Sept. 1, 1884, from

James C. Carter	$500	William Endicott, Jr.	$5000
			$5500

GIFTS FOR IMMEDIATE USE.

From T. Jefferson Coolidge, $65,000, being the balance of his gift of $115,000 for the construction of the Jefferson Physical Laboratory.

From George W. Wales, $200, for books for the Library, in continuance of former gifts for the same purpose.

Subscriptions towards the purchase of a collection of meteorites, paid to Sept. 1, 1884, from

J. P. Cooke	$2000	Henry P. Kidder	$1000
Alexander Agassiz	1000	G. H. Norman	500
Miss Anne Wigglesworth	1000	From Prof. Cooke's annual appropriation	500
H. H. Hunnewell	1000		
Martin Brimmer	1000		$8000

The money value of the meteorites was considered to be $10,000, and Professor J. Lawrence Smith is to be counted as a contributor of $2000 towards the purchase, but no cash was actually received from him.

From the Massachusetts Society for Promoting Agriculture, $2000, to be used towards the establishment of the Veterinary Hospital.

From George S. Hale, $450, for books for the Divinity School.

From Robert N. Toppan, $150, to be used as a prize on Political Science in the graduate department of the University.

From an anonymous friend, $500, to increase the salary of the Professor of Entomology.

From H. H. Hunnewell, $500, and from F. L. Ames, $500, on account of their gifts for a new greenhouse at the Botanic Garden.

From Henry Lee, $1500, for the salary of an Instructor in Political Economy.

Subscriptions to aid in publishing the University Bulletin, paid to Sept. 1, 1884, from

A. Agassiz	$50	C. S. Sargent	$50
Charles P. Curtis	200	W. B. Weeden	100
Henry Lee	50		$450

Subscriptions towards the fund for the new building for the Medical School, paid to Sept. 1, 1884, from

Stanton Blake	$500	S. R. Payson	$500
T. O. H. P. Burnham	1000		
			$2000

From the Dante Society, $50, for the purchase of books on Dante.

Through Professor Bôcher, for the purchase of books for the French department, $43.32.

Through Professor Child, on account of the "Subscription of 1880," for the purchase of books, $2.97.

The total amount of these gifts for immediate use is $81,346.29, as is also stated on page 14 of this report.

OTHER GIFTS.

From Francis Brooks, a collection of reproductions of bony growths, for the Museum of the Veterinary School.

From Dr. J. Collins Warren, the anatomical collection of his father, to be known as the J. Mason Warren collection, and to be placed in the Warren Museum.

From Mrs. George L. Stearns, a portrait of Dr. Hedge, painted by Miss Cranch, to be hung in Divinity Hall.

From William Everett, a portrait of Samuel Rogers, painted by Chester Harding.

From the executors of Joseph J. Cooke, books to the value of $5000, for the College Library.

From Dr. Coll, of Barcelona, Spain, through Joaquim M. Torroja, five anatomical plaster casts, for the Medical School.

From the children of Mrs. William Dwight, a portrait of Lieut. Col. Wilder Dwight, painted by Eastman Johnson, for Memorial Hall.

From the École Nationale des Ponts et Chaussées, Paris, through Professor William Watson, a collection of plates of engineering works, for the Scientific School.

From Miss Eliza A. Haven, books for the College Library.

From the executors of Thomas G. Appleton, a portrait of Samuel Appleton, painted by Gilbert Stuart Newton.

EDWARD W. HOOPER,
Treasurer.

BOSTON, Dec. 31, 1884.

ACCOUNTS.

General Statement of Receipts and Disbursements for the year ending

INCOME.

Interest on notes, mortgages, and advances, ...		$50,215.89
“ “ Massachusetts 5% Bonds, ...		1,196.39
“ “ Policy Mass. Hospital Life Insurance Co., ...		200.00
“ “ New Boston Coal Mining Co. Bonds, ...		350.00
“ “ Railroad Bonds (after deductions for sinking premiums).		
Atchison, Topeka & St. Fe, 7%, ...	$11,100.00	
Buffalo, Bradford & Pittsburg, ...	4,200.00	
Burlington & Mo. River in Nebraska, 6%,	15,781.91	
Atchison & Nebraska, 7%, ...	3,340.27	
Marion & McPherson 1st Mortg., 7%, .	9,000.00	
Ionia & Lansing, 1st Mortg., 8%, ...	11,712.91	
Marq., Hough. & Onton., 6%, ...	1,140.00	
Kan. City, St. Joseph & Council Bluffs, 7%,	3,000.00	
Kansas City, Topeka & Western, 7%, . .	6,480.00	
Michigan Southern & Northern Indiana,	70.00	
Fort Scott, So. E. & Memphis, 7%, . . .	544.44	
Kansas City & Cameron, 10%, ...	1,754.17	
Lincoln & No. Western, 7%, ...	3,780.00	71,903.70
“ “ Municipal Bonds.		
Cincinnati, ...	140.00	
Minneapolis, ...	160.00	300.00
Dividends on Stocks.		
Charles River National Bank, ...	480.00	
First (Cambridge) “ “	400.00	
Fitchburg “ “	144.00	
Massachusetts “ “	120.00	
Merchants “ “	1,584.00	
New England “ “	222.00	
Old Boston “ “	550.00	
Schenectady “ “ (N. Y.),	250.00	
Bank taxes refunded, ...	1,049.76	4,799.76
Amoskeag Manufacturing Co., ...	1,440.00	
Amory “ “	108.00	
Massachusetts “ “	280.00	
Merrimack “ “	1,020.00	
Nashua “ “	540.00	
Stark Mills “ “	480.00	
Wamsutta “ “	576.00	
Pacific Mills, ...	1,000.00	5,444.00
Chicago, Burlington & Quincy R. R., . .	8,008.00	
Pittsfield & North Adams R. R., ...	315.00	
Quincy Railroad Bridge Company, . . .	100.00	
Pittsburg, Ft. Wayne & Chicago R. R., .	437.50	8,860.50
Pennsylvania Coal Co., ...		1,870.00
Amount carried forward, ...		$145,140.24

by the Treasurer of Harvard College,
August 31, 1884.

EXPENSES.

Paid to account of Expenses in the

University, as per Table I. (page 30),		$40,679.03
College, " " II. (page 32).		
Salaries for instruction,	$143,761.85	
Repairs,	6,662.39	
Insurance on College Edifices, not valued on Treasurer's books,	993.33	
General Expenses,	42,623.60	
Scholarships,	25,765.00	
Beneficiaries,	2,112.75	
Prizes for Reading, &c.,	1,525.71	
Botanic Garden,	6,866.10	
Herbarium,	2,071.87	
Gymnasium,	7,982.45	
J. Lawrence Smith Collection of Meteorites,	8,000.00	
		248,365.05
Library, as per Table III. (page 37).		
Books,	18,981.83	
Salaries and other expenses,	24,941.96	
		43,923.79
Divinity School, as per Table IV. (page 38).		
Salaries and other expenses,	23,818.94	
Scholarships and Beneficiaries,	1,945.00	
		25,763.94
Law School, as per Table V. (page 40),		66,179.66
Medical School, as per Table VI. (page 41),		97,978.44
Dental School, as per Table VII. (page 42),		7,524.91
Lawrence Scientific School, as per Table VIII. (page 43).		
Salaries and other expenses,	13,802.27	
Museum of Comparative Zoölogy,	23,071.48	
		41,873.75
Observatory, as per Table IX. (page 44),		19,446.25
Bussey Institution, as per Table X. (page 45),	10,074.83	
School of Veter'y Medicine,	16,575.12	
Arnold Arboretum,	9,129.89	
		35,779.84
Amount carried forward		$627,514.66

General Statement of Receipts and Disbursements for the year ending

INCOME.

Amount brought forward, . .		$145,140.24
Real Estate, from rents, &c. (gross receipts).		
Cambridge (Houses and Lands), ...	$34,937.59	
Boston (general investments), ...	79,693.94	
Bussey stores, ...	34,998.08	
Sundry estates, ...	6,869.39	
		156,499.00
Term Bills.		
College, as per Table II., ...	178,927.38	
Divinity School, as per Table IV., ...	3,060.00	
Law School, as per Table V., ...	20,700.00	
Medical School, as per Table VI., ...	51,551.59	
Dental School, as per Table VII., ...	4,960.00	
Lawrence Scientific School, as per Table VIII., .	3,970.00	
School of Veterinary Medicine, as per Table X., .	970.00	
Bussey Institution, as per Table X., ...	450.00	
		264,588.97
Sundries.		
From Wm. Pennoyer Annuity, ...	277.50	
Trustees of Thayer Scholarships, ...	3,500.00	
" Count Rumford's Legacy, . . .	581.07	
" Edward Hopkins, ...	228.26	
For use of Library by resident graduates and others,	175.00	
Degrees of Ph.D. and S.D., ...	360.00	
Degree of Bachelor of Arts out of course, and Examination fees, ...	796.50	
Fees in Infirmary and Laboratory, Dental School, .	1,109.06	
Printing by College Press for other Departments, .	1,985.73	
Sales of grass, wood, and old material, ...	600.97	
Sales of old examination papers, ...	80.38	
Sale of time signals from Observatory, ...	2,895.83	
Sale of tickets to Commencement Dinner of 1884, .	511.00	
Sale of books, pamphlets, catalogues, &c., ...	1,257.43	
Subscriptions to Veterinary Hospital, ...	1,300.00	
Board of horses, cattle, &c. at Bussey Institution, .	1,367.46	
Fees from Veterinary Hospital and Forge, ...	5,967.79	
Use of lockers at Gymnasium, ...	1,894.25	
Fees for use of Gymnasium, ...	20.00	
Repayment of sundry advances, ...	98.57	
Proportion of expenses of Bursar's office repaid by other Departments, ...	375.45	
Proportion of expenses of Gymnasium repaid by other Departments, ...	1,005.31	
		26,387.56
Income received with Eben Wright Fund, ...	6,888.89	
Sundry gifts for immediate use, see page 9, ...	81,346.29	
		88,235.18
Total amount of income, carried forward, . . .		$680,850.95

by the Treasurer of Harvard College,
August 31, 1884.

EXPENSES.

Amount brought forward,			$627,514.66
Real Estate, expenses.			
Insurance.			
Cambridge,	$937.80		
Boston,	1,620.00		
Bussey stores,	1,659.00		
		4,216.80	
Taxes.			
Cambridge,	2,034.12		
Boston,	12,249.60		
Bussey stores, &c.,	7,572.55		
		21,856.27	
Interest.			
Bussey stores (on advances),		2,013.30	
Repairs, improvements, care, cleaning and sundries.			
Cambridge,	10,120.05		
Boston,	9,660.85		
Bussey stores,	2,991.01		
		22,771.91	
Heating and hoisting for Bussey stores, including repairs and renewal of apparatus,	5,556.49		
Less for sales of heat and power,	2,371.25		
		3,185.24	
			54,043.52
Annuities.			
Bussey,		6,300.00	
Gore,		842.45	
Lucy Osgood,		420.00	
Class of 1802,		120.00	
Anonymous,		720.00	
Bemis,		2,797.50	
			11,199.95
Sundry payments from income.			
To the Treasurer of the Museum of Fine Arts, from Gray Fund for Engravings,		500.00	
Balance of account for special purchase of engravings in 1881, from the Gray Fund,		8.22	
The income of the Daniel Williams Fund for the benefit of the Herring Pond and Mashpee Indians,		896.68	
The income of the Sarah Winslow Fund, to the Minister and Teacher at Tyngsboro', Mass.,		262.64	
Jefferson Physical Laboratory, spent on building,		73,468.59	
			75,136.13
Amount carried forward,			$767,894.26

General Statement of Receipts and Disbursements for the year ending

Total amount of income, brought forward,		$680,850.95

RECEIPTS EXCLUSIVE OF INCOME.

GIFTS.

Edward Russell Scholarship (additional),	$200.00	
Class of 1841 " "	200.00	
Ruluff Sterling Choate Scholarship,	6,000.00	
Warren H. Cudworth Scholarships,	600.00	
Henry T. Morgan Fund,	80,556.72	
Henry Harris "	29,939.33	
Eben Wright "	100,000.00	
Thomas G. Appleton "	5,000.00	
Seth Turner "	5,000.00	
Chauncey Wright "	500.00	
Anonymous, for general fund of Divinity School,	750.00	
Subscriptions to President's Fund,	5,500.00	
" for endowment of Botanic Garden,	1,000.00	
" " " " Divinity School,	540.00	
" " " " Dental School,	430.66	
" " " " Observatory,	22,222.19	
		258,438.90

SALES.

$13,000 Burl. & Mo. R. (Neb.) R.R. 6% c. bds, paid off,	13,000.00	
100 shares N. Y. & Harlem R. R. stock (Dorr Fund),	9,693.75	
50 " Pittsb., Ft. W. & Chic. R. R. stock "	6,543.75	
Sale of Real Estate received with Harris Fund,	15,000.00	
On account of sale of Holmes House,	175.00	
Sale of 1 right to take new stock in Chic., B. & Qu. R. R.,	.85	
		44,413.35

SUNDRIES.

From Dining Hall Association, to reduce debt,	1,500.00	
Advances to premiums, on $571,000 7% R. R. bds., repaid,	5,710.00	
" " accrued interest on bonds repaid,	6,028.24	
		13,238.24
Notes and Mortgages paid off (including $10,000 converted into real estate),	1,150,641.08	
Less invested in Notes and Mortgages,	814,334.80	
		336,306.28

Balance, September 1, 1883.		
Cash in Suffolk National Bank,	$7,195.40	
Cash in hands of Allen Danforth, Bursar,	1,855.66	
Term Bills due October, 1883,	75,397.36	
" " over due,	2,697.77	
		87,146.19
		$1,420,393.91

by the Treasurer of Harvard College,
August 31, 1884.

EXPENSES.

Total of expenses brought forward, ... $767,894.26

INVESTMENTS AND SUNDRY PAYMENTS.

Atchison & Nebraska R. R.	7%	bonds,	$135,000	cost,	$162,335.00	
Burl. & Mo. R. in Neb. “	6%	“	36,000	“	37,730.00	
Ionia & Lansing “	8%	“	9,000	“	10,035.00	
Kansas City & Cameron “	10%	“	141,000	“	179,377.50	
Ft. Scott, So. E. & Memph. “	7%	“	100,000	“	109,500.00	
Mass. 5% bond, 1894 (Paine Fund),			1,000	“	1,150.00	
Estate on Townsend St., Roxbury (taken for a debt),				“	10,000.00	
On acct. of 100 sh. new stock Chic., Burl. & Qu. R. R.,					4,000.00	
						514,127.50
Paid for accrued interest on above bonds, ...						7,401.98
Interest in certain Real Estate received as a portion of the Henry Harris Fund, ...						15,000.00
Paid Baring Brothers & Company in account, ...					22,843.58	
Less drafts on Baring Brothers & Company, . .					15,948.31	
						6,895.27
Paid on account of Mr. Agassiz's note from income of Memorial Fund, ...						1,641.08
Advanced to the Athletic Association (to be repaid with interest),						1,000.00

Balance, August 31, 1884.		
Cash in Suffolk National Bank, ...	$13,961.49	
Cash in hands of Allen Danforth, Bursar, ...	5,807.94	
Term Bills due October, 1884, ...	84,041.23	
“ “ overdue, ...	2,623.16	
		106,433.82
		$1,420,393.91

The following Account exhibits the State of the Property, as embraced in the Treasurer's Books, August 31, 1884.

Notes and Mortgages.			
Mortgages,		$235,525.00	
Long Wharf Co.'s Notes,		55,000.00	
Manufacturing Co.'s Notes,		305,000.00	
Personal Notes for Agassiz Memorial Fund,		34,074.18	
Personal Note for new professorship in Law School,		70,000.00	
			$699,599.18
Massachusetts 5% Bonds,	$24,500 valued at		28,107.50
New Boston Coal Mining Co. Bonds,	10,000 " "		9,000.00
Municipal Bonds.			
Cincinnati,	2,000.00 valued at	2,000.00	
Minneapolis,	2,000.00 " "	2,000.00	
			4,000.00
Railroad Bonds.			
Burl.& Mo. R. in Nebr. non ex. 6%,	273,000 val'd at	279,903.50	
Kan. City, St. Jos. & C.B., 1st M., 7%,	50,000 " "	50,000.00	
Lincoln & No. West., 1st M., 7%,	63,000 " "	63,000.00	
Kan. City & Camer., 1st M., 10%,	141,000 " "	141,000.00	
Atchison & Nebraska, 1st M., 7%,	150,000 " "	150,000.00	
Atch., Top. & St. Fé, 1st M., 7%,	185,000 " "	185,000.00	
Kan. City, Top. & West., 1st M., 7%,	108,000 " "	108,000.00	
Marion & McPherson, 1st M., 7%,	150,000 " "	150,000.00	
Ionia & Lansing, 1st Mortg., 8%,	150,000 " "	149,901.25	
Marqu., Hough. & Onton., 6%,	19,000 " "	19,942.50	
Ft. Scott, So. E. & Mem., 1st M., 7%,	100,000 " "	100,000.00	
Buffalo, Bradford & Pittsb., 7%,	60,000 " "	60,000.00	
Michigan So. & No. Indiana, 7%,	1,000 " "	1,000.00	
Railroad Bond Premiums,		148,530.41	
			1,606,277.66
Railroad Stock.			
Chicago, Burlington & Quincy,	1,001 shares,	99,261.08	
Chic., Burl. & Quin., paid on acc't of	100 new sh.	4,000.00	
Pittsburgh, Fort Wayne & Chicago,	50 shares,	5,000.00	
Pittsfield & North Adams,	63 "	6,300.00	
Quincy R. R. Bridge Co.,	10 "	1,250.00	
			115,811.08
Manufacturing Stock.			
Amory,	36 shares,	3,600.00	
Amoskeag,	12 "	10,800.00	
Massachusetts Mills,	7 "	6,600.00	
Merrimack,	17 "	17,000.00	
Nashua,	36 "	25,560.00	
New Bedford Copper Co.,	5 "	250.00	
Pacific Mills,	20 "	17,468.29	
Stark Mills,	12 "	11,900.00	
Wamsutta Mills,	96 "	10,480.00	
			103,658.29
Amount carried forward,			$2,566,453.71

Amount brought forward,			$2,566,453.71
Bank Stock.			
Charles River,	60 shares,	6,000.00	
First Cambridge,	50 "	5,000.00	
Fitchburg,	24 "	2,403.00	
Massachusetts,	12 "	3,000.00	
Merchants,	264 "	34,732.00	
New England,	37 "	3,896.00	
Old Boston,	200 "	8,933.00	
Schenectady (N. Y.),	50 "	2,800.00	
			66,764.00
Real Estate.			
Houses and Lands in Cambridge yielding income,		356,988.83	
Unimproved Lands in Cambridge,		74,487.79	
Bussey Real Estate in Boston and Dedham,		413,092.80	
Amory Estate, Franklin Street, Boston,		165,615.81	
Webb Estate, Washington Street, Boston,		164,604.79	
Andrews Estate, Washington Street, Boston,		165,562.00	
Gray Estate, Washington Street, Boston,		487,119.12	
Estate on Hawley Street, Boston,		38,650.78	
Estate on Hawkins Street, Boston,		29,476.09	
Ward's (Bumkin) Island, Boston Harbor,		1,200.00	
Reversion of Buildings on Brattle Street, Boston,		1,000.00	
Land in Dorchester,		1,294.30	
Estate on Townsend Street,		10,000.00	
			1,909,092.31
Sundries.			
In hands of Count Rumford's Trustees in Paris,		10,000.00	
Annuity of William Pennoyer, valued at		4,444.44	
Policy of the Mass. Hospital Life Insurance Co.,		5,000.00	
Pennsylvania Coal Co., 187 shares,		25,525.50	
Due from Dining Hall Association,		33,232.16	
" " Lawrence Scientific School,		3,704.76	
" " Bussey Trust,		40,266.13	
" " Dental School,		14,854.36	
" " Observatory,		876.07	
" " School of Veterinary Medicine,		5,813.21	
" " Law School Building Fund,		7,431.07	
" " Bussey Institution,		2,273.41	
Advances to Athletic Association,		1,000.00	
Baring Brothers & Co.,		773.41	
Term bills due October, 1884,		84,041.23	
" " overdue,		2,623.16	
			241,858.91
Cash in Suffolk National Bank,		13,961.49	
" " hands of Allen Danforth, Bursar,		5,807.94	19,769.43
		Total	$4,803,938.36

The foregoing Property represents the following Funds and Balances, and is answerable for the same.

UNIVERSITY FUNDS.

Principal, Sept. 1, 1883.		Principal, Aug. 31, 1884.	
$87,675.52	Stock Account (so called),	$87,404.35	
141,638.74	Insurance and Guaranty Fund (so called),	141,638.74	
5,250.00	**Samuel D. Bradford** Fund,	5,250.00	
15,750.00	**Israel Munson** Fund,	15,750.00	
16,871.63	**Leonard Jarvis** Fund,	16,871.63	
1,283.64	**Peter C. Brooks** Fund for building a President's House,	1,117.32	
155.66	**Thomas Cotton** Fund,	155.07	
57,221.28	**John Parker** Fellowships,	56,979.61	
10,578.54	**Harris** Fellowships,	10,820.23	
12,176.35	**John Thornton Kirkland** Fellowship,	11,680.85	
10,636.21	**James Walker** Fellowship,	10,686.09	
29,576.47	**Rogers** Scholarship,	30,305.55	
1,782.41	**Sumner** Prize Fund,	1,874.54	
150.00	**Robert N. Toppan** Prizes	150.00	
9,000.00	**Sever** Fund (unrestricted)	9,000.00	
25,890.35	Retiring Allowance Fund,	27,228.86	
25,000.00	**John C. Gray** Fund,	25,000.00	
57,125.18	President's Fund,	61,784.85	
110,792.79	**George B. Dorr** Fund,	110,155.29	
	Seth Turner Fund,	5,000.00	
	Henry T. Morgan Fund,	80,556.72	709,409.70
	COLLEGE FUNDS.		
27,748.64	**Alford** Professorship,	27,748.64	
28,337.40	**Boylston** "	28,337.40	
21,619.50	**Eliot** "	21,619.50	
10,000.00	" " (**Jon. Phillips's** gift),	10,000.00	
3,500.01	**Erving** "	3,500.01	
35,990.99	**Fisher** "	35,990.99	
20,217.08	**Hersey** "	20,217.08	
19,610.46	" " (**Thomas Lee's** gift),	20,624.30	
3,747.33	**Hollis** " (Mathematics),	3,747 33	
34,560.38	**Hollis** " (Divinity),	34,447.13	
43,062.93	**McLean** "	43,062.93	
21,000.00	**Perkins** "	21,000.00	
25,020.19	**Plummer** "	25,020.19	
52,500.00	**Pope** "	52,500.00	
52,996.37	**Rumford** "	52,996.37	
23,139.83	**Smith** "	23,139.83	
16,240.38	Fund for Permanent Tutors,	16,240.38	
125,000.00	**Class Subscription** Fund,	125,000.00	
12,830.74	**Daniel H. Peirce** "	12,894.89	
2,144.94	**Paul Dudley** Fund for Lectures,	2,255.84	
31,500.00	**Jonathan Phillips** Fund (unrestricted)	31,500.00	
$1,229,321.94	Amounts carried forward,	$611,842.81	709,409.70

Principal, Sept. 1, 1883.		Principal, Aug. 31, 1884.	
$1,229,321.94	. . . . Amounts brought forward, .	$611,842.81	709,409.70
1,050.00	**John A. Blanchard** Fd. (unrestricted),	1,050.00	
3,606.67	**John W. P. Abbot** “ “	3,793.15	
5,600.00	**Daniel Austin** “ “	5,600.00	
345.99	**Henry Flynt's** Bequest, ...	344.68	
2,542.09	**Abbot** Scholarship, ...	2,523.51	
800.06	**Alford** “	801.42	
5,173.31	**Bartlett** “	5,190.75	
5,452.41	**Bassett** “	5,459.28	
11,660.91	**Bigelow** “	11,513.78	
107,255.46	**Bowditch** “	107,800.54	
587.67	**Bright** “ (balance), . . .	230.17	
2,745.89	**Browne** “	2,737.86	
	Warren H. Cudworth	600.00	
7,174.42	**Class of 1802** Scholarship, ...	7,175.32	
3,071.98	“ **1814** “	3,030.80	
5,039.12	“ **1815** “ **(Kirkland),**	5,049.64	
3,757.08	“ **1817** “	3,751.32	
1,351.04	“ **1828** “	1,420.89	
2,630.83	“ **1835** “	2,616.85	
3,773.26	“ **1841** “	3,995.96	
3,164.82	“ **1852** “ **(Dana),** .	3,328.45	
7,034.56	**Crowninshield** “	7,398.27	
	Ruluff S. Choate “	6,064.63	
5,238.64	**Derby** “(George & Martha),	5,259.50	
5,349.77	**W. S. Eliot** “	5,326.37	
5,969.28	**Farrar** “	5,927.88	
2,480.49	**Greene** “	2,488.71	
6,750.52	**Hodges** “	7,099.55	
5,389.72	**Levina Hoar** “	5,468.38	
4,883.54	**Hollis** “	4,886.04	
735.14	**Matthews** “ (balance), .	980.77	
7,612.27	**Morey** “	7,505.81	
6,611.43	**Pennoyer** “	6,620.96	
609.75	**Rodger** “	641.29	
3,180.50	**Henry B. Rogers**	3,194.96	
843.40	**Edward Russell** “	1,097.32	
4,077.05	**Saltonstall** “ (Mary & Leverett),	4,287.83	
673.46	“ “ (Dorothy), . .	708.25	
5,420.50	**Slade** “	5,450.77	
3,177.89	**Sever** “	3,167.19	
9,444.54	**Sewall** “	9,432.85	
44,356.74	**Shattuck** “	44,750.00	
2,762.51	**Story** “	2,755.36	
2,131.50	**Stoughton** “	2,174.77	
4,128.19	**Gorham Thomas** “	4,091.61	
6,628.61	**Toppan** “	6,671.33	
24,940.58	**Townsend** “	24,730.03	
3,958.53	**Walcott** “	3,963.21	
9,184.20	**Whiting** “	9,606.43	
9,569.98	Exhibitions, ...	9,462.00	
1,782.35	**Palfrey** Exhibition, ...	1,784.48	
1,200.00	**Samuel Ward** Fund, ...	1,200.00	
$1,602,180.59	. . . Amounts carried forward, . .	$994,053.73	709,409.70

Principal, Sept. 1, 1883.		Principal, Aug. 31, 1884.	
$1,602,180.59	. . . Amounts brought forward, .	$994,053.73	$709,409.70
1,122.01	**John Glover** Fund, ...	1,180.02	
2,394.03	**Rebecca A. Perkins** Fund, . . .	2,517.80	
10,923.88	**Quincy Tufts** Fund, ...	10,888.65	
5,252.01	**Day** "	5,288.54	
10,213.19	**Munroe** "	10,206.20	
15,676.68	**Lee** Fund for Reading, ...	15,742.18	
4,324.57	**Boylston** Prizes for Elocution, . .	4,293.17	
11,889.40	**Bowdoin** Prizes for Dissertations, .	11,704.06	
1,016.38	**Hopkins** Gift for "Deturs," . . .	1,071.46	
	Chauncey Wright Fund, ...	505.37	
41,399.03	Botanic Department Fund, ...	42,418.01	
52,882.31	**Lowell** Fund for a Botanic Garden, .	52,882.31	
18,258.59	Herbarium Fund, ...	17,130.71	
125.00	Salary account (unexpended balance),	125.00	
44,805.04	Physical Laboratory Endowment, . .	47,121.46	1,217,128.67
	LIBRARY FUNDS.		
	Eben Wright Fund, ...	100,000.00	
11,006.36	Subscription for Library, ...	10,764.62	
2,089.48	**Bowditch** Fund, ...	2,105.47	
2,494.20	**Bright** "	647.61	
5,264.49	**Denny** "	5,264.95	
5,298.62	**Farrar** "	5,316.10	
3,642.05	**Haven** "	3,693.57	
5,712.17	**Hayward** "	5,557.32	
2,479.84	**Hollis** "	2,512.03	
2,072.02	**Homer** "	2,103.58	
5,417.55	**Lane** "	5,338.96	
20,897.96	**Lowell** "	20,863.89	
62,227.38	**Minot** "	60,193.79	
6,962.64	**Osgood** " (Mary), ...	7,164.86	
7,081.82	**Osgood** " (Lucy), ...	7,201.74	
5,075.97	**Salisbury** "	5,251.09	
20,412.60	**Sever** "	20,109.93	
4,315.60	**Shapleigh** "	4,162.51	
37,277.74	**Sumner** "	37,364.73	
5,014.07	**Tucker** "	5,070.30	
5,041.82	**Ward** "	5,251.35	
130.80	**Wales** "	.28	
16,351.42	**Walker** "	16,142.97	
59.03	Sundry gifts, etc. (unexpended balances),	71.40	332,153.05
	LAW SCHOOL FUNDS.		
6,751.89	Law School (balance), ...	6,339.03	
15,750.00	**Dane** Professorship, ...	15,750,00	
23,979.82	**Bussey** "	23,979.82	
8,340.81	**Royall** "	8,340.81	
92,962.50	New "	93,201.87	
32,021.25	Law School Book Fund, ...	32,021.25	179,632.78
25,653.33	" " Building Fund, . . .		
	MEDICAL SCHOOL FUNDS.		
70,875.13	Medical School (balance), ...	52,940.50	
19,192.65	**Jackson** Medical Fund, ...	19,192.65	
17,129.20	**Geo. C. Shattuck** Fund, ...	17,129.20	
$2,371,444.92	. . . . . Amounts carried forward,	$89,262.35	$2,438,324.20

Principal, Sept. 1, 1883.		Principal, Aug. 31, 1884.	
$2,371,444.92	Amounts brought forward,	$89,262.35	$2,438,324.20
12,243.37	**Warren** Fund for Anatom'l Museum,	12,219.44	
3,748.64	**Boylston** Fund for Medical Prizes,	3,886.46	
2,407.42	“ “ “ “ Books,	2,531.86	
2,767.06	Medical Library Fund,	3,002.69	
17,671.59	Medical School Building Fund,		
2,000.00	**Quincy Tufts** Medical Fund,	2,000.00	
25,512.68	**Edward M. Barringer** Fund,	25,512.68	138,415.48
	DIVINITY SCHOOL FUNDS.		
24,808.76	General Fund,	24,206.54	
37,583.74	**Bussey** Professorship,	37,583.74	
16,015.81	**Parkman** “	16,015.81	
6,008.43	**Hancock** “	6,008.43	
44,845.73	**Winn** Prof. of Ecclesiastical History,	45,345.73	
20,280.38	**Dexter** Lectureship,	20,280.38	
9,184.69	**Henry Lienow** Fund,	9,184.69	
5,250.00	**Mary P. Townsend** Fund,	5,250.00	
2,100.00	**Winthrop Ward** Fund,	2,100.00	
1,050.00	**Samuel Hoar** “	1,050.00	
1,050.00	**Abraham W. Fuller** Fund,	1,050.00	
1,050.00	**Caroline Merriam** “	1,050.00	
13,096.95	**Jackson** Foundation,	13,134.06	
2,177.95	**Joshua Clapp** Fund,	2,177.95	
1,050.00	**William Pomeroy** Fund,	1,050.00	
525.00	**Hannah C. Andrews** Fund,	525.00	
3,511.96	**J. Henry Kendall** Scholarship,	3,693.53	
3,059.84	**Nancy Kendall** “	3,078.04	
911.34	**Lewis Gould** Fund,	911.34	
833.54	**Adams Ayer** “	876.66	
7,875.00	**Joseph Baker** “	7,875.00	
5,194.69	**Thomas Cary** Scholarships,	5,113.27	
2,309.19	**George Chapman** Scholarship,	2,288.57	
3,337.37	**Joshua Clapp** “	3,384.89	
1,769.15	Beneficiary money returned,	1,860.61	
40,000.00	**Th. Tileston** of New York Endowm't,	40,000.00	
10,000.00	**Henry P. Kidder** Fund,	10,000.00	
1,000.00	**Abby Crocker Richmond** Fund,	1,000.00	
69,667.02	New Endowment,	70,207.02	
17,000.00	**Oliver Ames** Fund,	17,000.00	
800.00	**Daniel Austin** Fund,	800.00	
11,530.95	**Abner W. Buttrick** Fund,	11,577.10	365,678.36
	LAWRENCE SCIENTIFIC SCHOOL, AND MUSEUM OF COMPARATIVE ZOÖLOGY FUNDS.		
38,807.17	Professorship of Engineering,	38,807.17	
2,860.50	Professorship of Chemistry,	2,860.50	
61,536,43	**Abbott Lawrence** Fund,	61,536.43	
50,375.00	**James Lawrence** “	50,375.00	
30,686.85	**John B. Barringer** “	30,686.85	
100,570.00	**Sturgis Hooper** “	100,170.00	
50,000.00	**Gray** Fund for Zoölogical Museum,	50,000.00	
297,933.10	**Agassiz Memorial** Fund,	297,933.10	
7,594.01	Teachers' and Pupils' Fund,	7,594.01	
117,469.34	Permanent Fund,	117,469.34	
7,740.66	**Humboldt** Fund,	7,740.66	765,173.06
$3,568,246.23	Amounts carried forward,		$3,707,591.10

Principal, Sept. 1, 1883.		Principal, Aug. 31, 1884.	
$3,568,246.23	. . . . . Amounts brought forward, ...		$3,707,591.10
	OBSERVATORY FUNDS.		
110,293.88	**Edward B. Phillips** Fund, . . .	110,293.88	
21,000.00	**James Hayward** " . . .	21,000.00	
23,065.18	**David Sears** "	23,661.41	
12,411.37	**Josiah Quincy** " . . .	10,941.75	
2,000.00	**Charlotte Harris** " . . .	2,000.00	
	Thomas G. Appleton " . . .	5,000.00	
10,000.00	Anonymous Observatory Fund (at present charged with an Annuity),	10,000.00	
3,072.52	Observatory Subscriptions (balance),		
17,384.38	Observatory Endowment, ...	39,606.57	222,503.61
	OTHER FUNDS FOR SPECIAL PURPOSES.		
413,092.80	**Bussey** Trust (income thereof, ½ to Bussey Institution, ¼ to Law School, and ¼ to Divinity School), . . .	413,092.80	
50,000.00	**Bright** Legacy, ...	50,000.00	
27,079.85	**Robert Troup Paine** Fund, . . .	28,276.24	
50.50	**Bussey** Institution, ...		
955.00	Dental Subscription Fund, . . .	1,385.66	
2,882.43	**Bussey** Building Fund, ...	2,882.43	
152,095.73	**James Arnold** "	152,488.90	
12,596.18	**Arnold** Arboretum "	12,002.69	
42,000.00	**James Savage** Fund, ...	42,000.00	
16,146.08	**Gray** Fund for Engravings, . . .	16,521.61	
20,805.88	**Gore** Annuity Fund, ...	21,039.10	
5,955.79	**Lucy Osgood** Annuity Fund, . .	5,843.72	
51,113.31	**Bemis** Annuity Fund, ...	50,900.81	
2,669.84	**Gospel Church** Fund, ...	2,807.88	
3,171.50	**John Foster** Fund (income to Divinity School, Law School, and Medical School, in turn), ...	3,171.50	
	Henry Harris Fund, . , ...	29,939.33	
6,121.86	Baring Bros. & Co. (balance due them),		
340.78	School of Veterinary Medicine, . .		
28,458.78	Physical Laboratory Building Fund,	20,691.57	853,044.24
	FUNDS IN TRUST FOR PURPOSES NOT CONNECTED WITH THE COLLEGE.		
16,051.31	**Daniel Williams** Fund for the conversion of the Indians, ...	15,984.47	
4,834.39	**Sarah Winslow** Fund, for the Minister and Teacher at Tyngsborough, Mass.,	4,814.94	20,799.41
$4,623,895.57			$4,803,938.36

Changes in the Funds during the year ending August 31, 1884.

Total amount of Funds, August 31, 1884, as before stated,	$4,803,938.36	
Total amount of Funds, September 1, 1883, as before stated,	4,623,895.57	
Showing a total increase during the year of		$180,042.79
Which is made up as follows: —		
Gifts forming new Funds or increasing old ones,	258,438.90	
Increase of Funds established during the year,	70.00	258,508.90
Deduct from this amount for		
Decrease of specially invested Funds by loss from change of investment,	637.50	
Decrease of Stock Account, by excess of expenditure over income, in College, Library, and University accounts,	271.17	
Other decrease more than increase of Funds and balances, which appear both at the beginning and end of the year,	24,646.86	
Building Funds and other balances used up,	52,910.58	78,466.11
		$180,042.79

Net decrease of Funds and balances as above stated,	78,466.11
Less increase, other than gifts for capital account, as above stated,	70.00
Leaving amount of the net decrease of the Funds and balances, excluding gifts for capital account, as is also shown in the following table,	$78,396.11

Statement showing Changes in the Different

Increase of Funds which appear both at the beginning and the end of the year, being the excess of income (including gifts for immediate use) over payments towards the special objects of those Funds.

Harris Fellowship,		$241.69
James Walker Fellowship,		49.83
Rogers Scholarship,		729.08
Sumner Prize Fund,		92.13
Retiring Allowance Fund,		1,338.51
Hersey Professorship (**Thomas Lee's** gift),		1,013.84
Daniel H. Peirce Fund,		64.15
Paul Dudley Fund for Lectures,		110.90
John W. P. Abbott Fund,		186.48
Alford Scholarship,		1.36
Bartlett "		17.44
Bassett "		6.87
Bowditch "		545.08
Class of 1802 Scholarship,		.90
" **1815** "	(**Kirkland**),	10.52
" **1828** "		69.85
" **1841** "		22.70
" **1852** "	(**Dana**),	163.63
Crowninshield "		363.71
Derby "	(**George & Martha**),	20.86
Greene "		8.22
Hodges "		349.03
Levina Hoar "		78.66
Hollis "		2.50
Matthews "	(balance),	245.63
Pennoyer "		9.53
Rodger "		31.54
Henry B. Rogers "		14.46
Edward Russell "		53.92
Saltonstall "	(**Mary & Leverett**),	210.78
" "	(**Dorothy**),	34.79
Slade "		30.27
Shattuck "		393.26
Stoughton "		43.27
Toppan "		42.72
Walcott "		4.68
Whiting "		472.23
Palfrey Exhibition,		2.13
John Glover Fund,		58.01
Rebecca A. Perkins Fund,		123.77
Day Fund,		36.53
Lee Fund for Reading,		65.50
Hopkins Gift for "Deturs,"		55.08
Amount carried forward,		$7,416.09

Funds during the year ending August 31, 1884.

Decrease of Funds, which appear both at the beginning and the end of the year, being the excess of payments over income received (including gifts for immediate use) for the special objects of those Funds.

Peter C. Brooks Fund,	$166.32
Thomas Cotton Fund,	.59
John Parker Fellowships,	241.67
John Thornton Kirkland Fellowship,	495.50
President's Fund,	840.33
Hollis Professorship (Divinity),	113.25
Henry Flynt's Bequest,	1.31
Abbot Scholarship,	18.58
Bigelow “	147.13
Bright “	357.50
Browne “	8.03
Class of 1814 Scholarship,	41.18
“ **1817** “	5.76
“ **1835** “	13.98
W. S. Eliot “	23.40
Farrar “	41.40
Morey “	106.46
Sever “	10.70
Sewall “	11.69
Story “	7.15
Gorham Thomas “	36.58
Townsend “	210.55
Exhibitions,	107.98
Quincy Tufts Fund (College),	35.23
Munroe Fund,	6.99
Boylston Prizes for Elocution,	31.40
Bowdoin Prizes for Dissertations,	185.34
Herbarium Fund,	1,127.88
Subscription for Library,	241.74
Bright Book Fund,	1,846.59
Hayward “ “	154.85
Lane “ “	78.59
Lowell “ “	34.07
Minot “ “	2,033.59
Sever “ “	302.67
Shapleigh “ “	153.09
Wales “ “	130.52
Walker “ “	208.45
Law School (balance),	412.86
Medical School (balance),	17,934.63
Warren Fund for Anatomical Museum,	23.93
Divinity School (general fund),	1,352.22
Thomas Cary Scholarships,	81.42
Amount carried forward,	$29,383.10

Statement showing Changes in the Different

Amount brought forward, .	$7,416.09	
Botanic Department Fund, ...	18.98	
Physical Laboratory Endowment, ...	2,316.42	
Bowditch Book Fund, ...	15.99	
Denny " "	.46	
Farrar " "	17.48	
Haven " "	51.52	
Hollis " "	32.19	
Homer " "	31.56	
Osgood " " (Mary)	202.22	
" " " (Lucy)	119.92	
Salisbury " "	175.12	
Sumner " "	86.99	
Tucker " "	56.23	
Ward " "	209.53	
Sundry gifts for Books (unexpended balances),	12.37	
New Professorship of Law, ...	239.37	
Boylston Fund for Medical Prizes, ...	137.82	
Boylston Fund for Medical Books, ...	124.44	
Medical Library Fund, ...	235.63	
Winn Professorship of Ecclesiastical History, .	500.00	
Jackson Foundation, ...	37.11	
J. H. Kendall Scholarship, ...	181.57	
Nancy " "	18.20	
Adams Ayer Fund, ...	43.12	
Joshua Clapp Scholarship, ...	47.52	
Divinity School Beneficiary money returned, .	91.46	
Abner W. Buttrick Fund, ...	46.15	
David Sears "	596.23	
Robert Troup Paine "	1,196.39	
James Arnold "	393.17	
Gray Fund for Engravings, ...	375.53	
Gore Annuity Fund, ...	233.22	
Gospel Church Fund, ...	138.04	
		15,398.04
Increase of Funds established during the year.		
Ruluff Sterling Choate Scholarship, . . .	64.63	
Chauncey Wright Fund, ...	5.37	
		70.00
		15,468.04
Balance, which is the net decrease of the Funds for the year ending August 31, 1884, apart from gifts for capital account,		78,396.11
Total, ...		$93,864.15

Funds during the year ending August 31, 1884 (Continued.)

Amount brought forward,	$29,383.10	
George Chapman Scholarships,	20.62	
Sturgis Hooper Fund,	400.00	
Josiah Quincy "	1,469.62	
Arnold Arboretum "	593.49	
Lucy Osgood Annuity Fund,	112.07	
Bemis " "	212.50	
Physical Laboratory Building Fund,	7,767.21	
Daniel Williams Fund,	66.84	
Sarah Winslow Fund,	19.45	40,044.90
Decrease of **George B. Dorr** Fund, net loss from change of special investment,		637.50
Law School Building Fund, balance of account spent,	25,653.33	
Medical School Building Fund," " " "	17,671.59	
Observatory Subscriptions, " " " "	3,072.52	
Bussey Institution, " " " "	50.50	
School of Veterinary Medicine, " " "	340.78	46,788.72
Baring Bros. & Co., balance paid off,		6,121.86
Decrease of Stock Account, by excess of expenditure over income, in College, Library, and University accounts,		271.17
Total,		$93,864.15

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every fund, in case that sum be either less or more than the actual income of the fund. If the object to which the income of a fund is to be applied be a general one, — like salaries, for example,— no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 49.

TABLE No. I.

THE UNIVERSITY.

RECEIPTS.

Income of the unappropriated fund heretofore called the Stock Account,	$4,532.85	
Income of the following funds :—		
Insurance and Guaranty,	7,322.74	
Israel Munson,	814.28	
Leonard Jarvis,	872.28	
Samuel D. Bradford,	271.43	
Sever,	465.30	
John C. Gray,	1,292.50	
George B. Dorr,	6,269.69	
Peter C. Brooks,	66.38	
Thomas Cotton,	7.60	
President's,	2,934.85	
Parker Fellowship,	2,958.33	
John Thornton Kirkland Fellowship,	629.50	
Harris Fellowship,	546.93	
James Walker Fellowship,	549.88	
Rogers Scholarship,	1,529.08	
Sumner Prize,	92.13	
Retiring Allowance,	1,338.51	
Seth Turner,	204.63	
Henry T. Morgan,	1,165.63	
Henry Harris, ½ of income,	623.80	34,488.32
For the degrees of Ph.D. and S.D.,	360.00	
For care of the **Sarah Winslow** Fund,	6.73	
Sale of Quinquennial Catalogues,	38.00	
From other Departments for proportion of expenses of Bursar's office,	375.45	
Balance remaining after dividing the net income among the Funds,	167.84	
From **Robert N. Toppan**, additional gift for prize on Political Science,	150.00	1,098.02
		$35,586.34

TABLE I., CONTINUED.

PAYMENTS.

Overseers' Expenses.		
Advertising,	$200.35	
Printing President's Annual Report,	526.17	
Printing Treasurer's " "	122.14	
Printing other reports, auditing Treasurer's accounts, &c.,	127.75	976.41
Office Expenses.		
President's	150.53	
Treasurer's	348.73	
Bursar's	632.40	
Supt. of Buildings,	15.01	
Corporation Rooms (fuel, rent, &c.),	1,715.53	2,862.20
Salaries.		
President,	8,783.37	
Treasurer,	4,000.00	
Secretary of the Board of Overseers,	100.00	
Bursar,	3,000.00	
Bursar's Assistant,	900.00	
Secretary at Cambridge,	600.00	
For keeping Treasurer's books and copying records and other papers,	3,000.00	
Superintendent of Buildings,	1,500.00	21,883.37
Fellowships.		
John Parker,	3,200.00	
Harris,	305.24	
John Thornton Kirkland,	1,125.00	
Rogers Scholarship,	800.00	
James Walker,	500.00	5,930.24
Prizes.		
Robert N. Toppan, in Political Science,		150.00
Memorial Hall and Sanders Theatre.		
Repairs, fuel, gas, &c.,	2,614.76	
Insurance,	695.00	3,309.76
Sundries.		
Advertising,	57.65	
Labor, &c. on grounds outside of College Yard,	1,295.48	
Repairs and improvements on the President's house,	232.70	
" " " to Herbarium,	333.72	
" " " " Boat-house,	950.00	
Subscription to Mercantile Agency,	200.00	
Watering streets,	209.00	
Watchmen,	1.003.40	
Fire Apparatus,	54.00	
Freight, diplomas, &c.,	49.05	
Printing,	382.05	
Prof. Norton's expenses to England,	300.00	
University Lectures,	500.00	5,567.05
		$40,679.03

Table No. II.

THE COLLEGE.

RECEIPTS.

From Term Bills.			
Instruction,		$144,151.25	
Rents available for general expenses,		34,776.13	
Income of Scholarship Funds.			178,927.38
Abbot,		131.42	
Alford,		41.36	
Bartlett,		267.44	
Bassett,		281.87	
Bigelow,		602.87	
Bowditch,		5,545.08	
Bright, ½ income of Bright Legacy,		1,292.50	
Browne,		141.97	
Ruluff Sterling Choate,		64.63	
Class of 1802,		370.90	
" **1814,**		158.82	
" **1815 (Kirkland),**		260.52	
" **1817,**		194.24	
" **1828** (accumulating),		69.85	
" **1835,**		136.02	
" **1841,**		197.70	
" **1852 (Dana)** (accumulating),		163.63	
Crowninshield (accumulating),		363.71	
George and **Martha Derby,**		270.86	
Wm. Samuel Eliot,		276.60	
Farrar,		308.60	
Greene,		128.22	
Levina Hoar (Town of Lincoln),		278.66	
Hodges (accumulating),		349.03	
Hollis,		252.50	
Matthews (½ of net rents of Hall),		4,995.63	
Morey,		393.54	
Pennoyer. Interest,	$112.03		
Annuity,	277.50	389.53	
Rodger (accumulating),		31.54	
Henry Bromfield Rogers.		164.46	
Edward Russell (accumulating),		53.92	
Mary and **Leverett Saltonstall,**		210.78	
Dorothy Saltonstall (accumulating),		34.79	
Savage,		300.00	
Sever,		164.30	
Sewall,		488.31	
Shattuck,		2,293.26	
Slade,		280.27	
Story,		142.85	
Stoughton (accumulating),		43.27	
Gorham Thomas,		213.42	
Toppan,		342.72	
Townsend,		1,289.45	
Walcott,		204.68	
Whiting (accumulating),		472.23	24,657.95
Amount carried forward,			$203,585.33

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward, ...		$203,585.33
Received from the Trustee of the **Thayer** Scholarships, ...		3,500.00
Other Beneficiary Funds, income of.		
"Exhibitions,"	494.77	
Palfrey "Exhibition,"	92.13	
Samuel Ward. From special investment, . .	50.00	
John Glover (accumulating), ...	58.01	
Rebecca A. Perkins "	123.77	
Quincy Tufts, ...	564.77	
Moses Day, ...	271.53	
Munroe, ...	528.01	
		2,182.99
Prize Funds, income of.		
Thomas Lee Prizes for Reading, ...	810.50	
Ward Nicholas Boylston Prizes for Elocution,	223.60	
James Bowdoin Prizes for Dissertations, . . .	614.66	
Edward Hopkins Gift for "Deturs,"	280.79	
Chauncey Wright.	5.37	
		1,934.92
Funds for Instruction.		
Income of the **Alford** Professorship, ...	1,434.62	
Boylston "	1,465.02	
Eliot "	1,117.75	
J. Phillips's addition to Eliot Prof.,	500.00	
Erving Professorship, ...	180.95	
Fisher "	1,860.73	
Hersey "	594.78	
Hollis " (Mathematics), . .	193.72	
McLean "	2,226.36	
Perkins "	1,085.70	
Plummer "	1,293.53	
Pope "	2,714.25	
Rumford "	2,803.96	
Smith "	1,196.34	
Fund for Permanent Tutors, . . .	839.61	
Thos. Lee Fund for the Hersey Prof.	1,013.84	
Class Subscription, ...	6,462.50	
Henry Flynt, ...	16.96	
Hollis Professorship of Divinity, .	1,786.75	
Paul Dudley Fund (accumulating),	110.90	
Gifts for salaries, ...	2,000.00	
		30,898.27
Botanic Garden.		
Income of Fund, ...	2,151.08	
" " the **Lowell** Fund, ...	2,734.00	
Estimated value of use of house by Prof. Gray,	1,000.00	
On account of gifts for new greenhouse, . . .	1,000.00	6,885.08
Herbarium. Income of Fund, ...		943.99
Amount carried forward, ...		$249,930.58

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward, ...		$249,930.58
Income of **Jonathan Phillips's** unrestricted Fund,	$1,628.55	
" " **John A. Blanchard's** " "	54.29	
" " **Daniel H. Pierce** Fund, ...	641.54	
" " **J. W. P. Abbot** " (accumulating),	186.48	
" " Fund for Physical Laboratory, ...	2,316.42	4,827.28
Sundries.		
For the Degree of Bachelor of Arts out of course, and examination fees, ...	796.50	
Sales of grass and old material, ...	55.00	
Sale of old examination papers, ...	80.38	
For Printing by College Press for other departm'ts,	1,985.73	
For use of rooms by College officers, ...	150.00	
Sale of tickets to Commencement Dinner of 1884,	511.00	
For use of lockers at Gymnasium, ...	1,894.25	
Fees for use of Gymnasium, ...	20.00	
For use of Gymnasium by other Departments, .	1,005.31	
From Prof. **Böcher**, for books for French Dpt.	43.32	
Subscription to purchase the **J. Lawrence Smith** Collection of Meteorites, ...	8,000.00	
Sale of Catalogues and Directories, ...	784.50	15,325.99
Total receipts, ...		$270,083.85

PAYMENTS.

Paid the incumbents of the following Scholarships.

Abbot, ...	$150.00
Alford, ...	40.00
Bartlett, ...	250.00
Basset, ...	275.00
Bigelow, ...	750.00
Bowditch, ...	5,000.00
Bright, ...	1,650.00
Browne, ...	150.00
Class of 1802, ...	250.00
" **1814**, ...	200.00
" **1815 (Kirkland)**, ...	250.00
" **1817**, ...	200.00
" **1835**, ...	150.00
" **1841**, ...	175.00
George and **Martha Derby**, ...	250.00
Wm. Samuel Eliot, ...	300.00
Farrar, ...	350.00
Greene, ...	120.00
Levina Hoar, ...	200.00
Hollis,.	250.00
Amount carried forward,	$10,960.00

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward,	$10,960.00	
Matthews,	4,750.00	
Morey,	500.00	
Pennoyer,	380.00	
Henry Bromfield Rogers,	150.00	
Savage,	300.00	
Sever,	175.00	
Sewall,	500.00	
Shattuck,	1,900.00	
Slade,	250.00	
Story,	150.00	
Thayer,	3,500.00	
Gorham Thomas,	250.00	
Toppan,	300.00	
Townsend,	1,500.00	
Walcott,	200.00	
		25,765.00
Paid other Beneficiaries.		
Exhibitions,	602.75	
Palfrey Exhibition,	90.00	
Samuel Ward Income,	50.00	
Quincy Tufts " (part of),	600.00	
Day Fund " " "	235.00	
Munroe Fund " " "	535.00	
		2,112.75
Prizes. **Lee** Prizes for Reading,	245.00	
Boylston Prizes for Elocution,	255.00	
Bowdoin Prizes for Dissertations	800.00	
"Deturs" from **Hopkins** Fund	225.71	
		1,525.71
Salaries for instruction,		143,761.85
Repairs and improvements on College Edifices not valued on Treasurer's books,		6,662.39
Insurance on College Edifices, etc. not valued on Treasurer's books,		993.33
Botanic Garden, for labor, repairs, and materials,	5,866.10	
paid on account of new greenhouse,	1,000.00	
		6,866.10
Herbarium, for labor, repairs, and materials,		2,071.87
Gymnasium, Locker money, paid Director,	1,151.25	
Salaries and wages,	2,550.00	
Janitors and cleaning,	873.74	
Gas, water, and sundries,	850.85	
Fuel,	606.10	
Apparatus and fittings,	1,365.51	
Insurance,	585.00	
		7,982.45
Paid for the **J. Lawrence Smith** Collection of Meteorites,		8,000.00
Amount carried forward,		$205,741.45

Table II., continued.

PAYMENTS.

Amount brought forward,			$205,741.45
General Expenses.			
Appropriations for collections and laboratories.			
Physical Apparatus (Prof. Lovering),	$600.00		
Mineral and Chemical (Prof. Cooke),	800.00		
Rumford (Prof. Gibbs),	300.00		
Botanical (Prof. Farlow),	350.00		
Biological (Prof. Farlow),	35.00		
Geological (Prof. Shaler),	200.00		
Zoölogical (Asst. Profs. Faxon and Mark),	220.00		
Fine Arts (Prof. Norton),	200.00		
Physical (Prof. Trowbridge),	300.00		
Drawing (Instructor Moore),	150.00		
Psychological (Asst. Prof. James)	457.21	$3,612.21	
Appleton Chapel.			
Preaching and morning services,	1,835.00		
Organist and Choir-master,	1,000.00		
Choir,	800.00		
Books, hymnals, and music,	181.94		
Fuel, Gas, Repairs, &c.,	771.42		
Blowing organ,	88.34		
Furniture,	291.08	4,967.78	
Admission examinations,		624.70	
Advertising,		42.00	
Books and binding,		121.82	
Cleaning and care of College buildings not valued on Treasurer's books,		8,500.84	
College Yard expenses, labor and material, &c.,		2,534.02	
Commencement Dinner 1884,		763.07	
Dean's and Registrar's Office, clerk, stationery, postage, copying, &c.,		2,080.73	
Fuel,		3,691.69	
Furniture,		1,097.89	
Freight, diplomas, and sundries,		359.42	
Gas,		1,030.24	
Music, Class-Day, 1884,		125.00	
" Commencement, 1884,		185.00	
Pews hired in Cambridge churches,		1,032.00	
Printing office, expenses,		5,870.85	
Printing,		21.25	
Services of examiners and proctors,		3,142.88	
" " undergraduates,		729.69	
Watchman,		124.00	
Water rates,		257.02	
Athletic Association expenses,		1,332.69	
Services in Chemical Laboratory,		354.81	
Instruments and apparatus,		22.00	
			42,623.60
Total payments,			$248,365.05

Table No. III.

THE LIBRARY.

RECEIPTS.

Income of the following Funds for the purchase of books.			
Subscription for Library,		$569.01	
Nathaniel I. Bowditch,		108.00	
Bright, ½ income of the **Bright** Legacy,	$1,292.50		
Interest on balance,	128.94	1,421.44	
Denny,		272.15	
Eliza Farrar,		273.96	
Horace A. Haven,		188.29	
George Hayward,		295.31	
Thomas Hollis,		128.22	
Sidney Homer,		107.12	
Frederick A. Lane,		280.11	
Lowell,		1,080.43	
Charles Minot. Interest,	$115.13		
From special investment,	4,200.00	4,315.13	
Lucy Osgood,		366.14	
Mary Osgood,		359.99	
Stephen Salisbury,		262.43	
Sever,		1,055.35	
Samuel Shapleigh,		223.14	
Charles Sumner,		1,927.27	
Ichabod Tucker. From special investment,		200.00	
Thomas W. Ward,		260.67	
George W. Wales. Gift,	$200.00		
Interest on unexpended balance,	6.77	206.77	
James Walker,		845.35	
			14,746.28
Subscription of 1880 (on account of),		2.97	
Gift from Dante Society,		50.00	
			52.97
James Savage Fund for general expenses (½ of income),		935.70	
Daniel Austin “ “ “ “		289.52	
Eben Wright “ “ “ “	$4,739.18		
Accrued Income received with Fund,	6,888.89	11,628.07	
			12,853.29
Snbscription to aid in publishing the Library Bulletin,			450.00
Fees for use of Library,		175.00	
Sales of Bulletins and Calendars,		114.00	
Fines,		10.00	
			299.00
			$28,401.54

PAYMENTS.

For Books from	
Subscription Fund,	$810.75
Bowditch “	92.01
Amount carried forward,	$902.76

Table III., continued.

PAYMENTS.

Amount brought forward, ...	$902.76	
Bright Fund, ...	3,268.03	
Denny “	271.69	
Farrar “	256.48	
Haven “	136.77	
Hayward “	450.16	
Hollis “	96.03	
Homer “	75.56	
Lane “	358.70	
Lowell “	1,114.50	
Minot “	6,348.72	
Lucy Osgood	246.22	
Mary Osgood	157.77	
Salisbury “	87.31	
Sever “	1,358.02	
Shapleigh “	376.23	
Sumner “	1,840.28	
Tucker “	143.77	
Ward “	51.14	
Wales “	337.29	
Walker “	1,053.80	
Dante Society money, ...	47.12	
Duplicate “	.51	
Subscription of 1880, ...	2.97	18,981.83
Salaries and wages, ...	18,063.72	
Binding, ...	1,334.94	
Stationery and postage, ...	534.16	
Fuel, ...	907.90	
Repairs and improvements, ...	1,531.56	
Freight, water, and sundries, ...	252.66	
Janitors and cleaning, ...	382.56	
Furniture, ...	269.61	
Insurance on steam boiler, ...	15.00	
Bulletins, and other printing, ...	1,551.28	
Balance of cost of Scudder Catalogue charged off, . . .	98.57	24,941.96
		$43,923.79

Table No. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of the following Funds applicable to Salaries.

General Fund, ...	$1,316.54
Benjamin Bussey Professorship, ...	1,943.09
Parkman Professorship, ...	828.03
Amount carried forward, ...	**$4,087.66**

TABLE IV., CONTINUED.

RECEIPTS.

Amount brought forward,	$4,087.66	
John Hancock Professorship,	310.61	
Winn Professorship of Ecclesiastical History,	2,318.54	
Samuel Dexter,	1,048.48	
Henry Lienow,	474.86	
Mary P. Townsend,	271.43	
Winthrop Ward,	108.57	
Samuel Hoar,	54.29	
Abraham W. Fuller,	54.29	
Caroline Merriam,	54.29	
Joseph Baker,	407.14	
Thomas Tileston of New York Endowment,	2,068.00	
Oliver Ames,	878.90	
Henry P. Kidder,	517.00	
Abby Crocker Richmond,	51.70	
New Subscription,	3,608.87	16,314.63
Income of Scholarship Funds.		
Thomas Cary,	268.58	
George Chapman,	119.38	
Joshua Clapp,	172.52	
Jackson Foundation,	677.11	
J. Henry Kendall,	181.57	
Nancy Kendall,	158.20	1,577.36
Income of other Funds.		
Joshua Clapp,	112.60	
William Pomeroy,	54.29	
Hannah C. Andrews,	27.14	
Lewis Gould,	47.10	
Daniel Austin,	41.36	
Abner W. Buttrick,	596.15	
Adams Ayer,	43.12	
Interest on Beneficiary money returned,	91.46	1,013.22
Term Bills.		
For Instruction,	1,100.00	
For Rents,	1,960.00	
		3,060.00
George S. Hale, gift for purchase of books,		450.00
Sale of books, &c.,		40.35
Benjamin Bussey Trust. One-fourth of net income for use of this School,		2,819.25
		$25,274.81

PAYMENTS.

For Salaries for Instruction,	$18,626.68
Services of students,	401.50
Labor, repairs, and improvements,	2,631.81
Cleaning and care of rooms,	735.10
Amount carried forward,	$22,395.09

Table IV., continued.

PAYMENTS.

Amount brought forward,	$22,395.09	
Books and binding,	316.13	
Printing,	59.25	
Fuel,	151.50	
Gas,	210.13	
Water rates,	25.01	
Stationery, postage, diplomas, and sundries,	65.98	
Collation,	85.00	
Furniture,	248.10	
Proportion of expenses of Bursar's office,	40.86	
" " " " Gymnasium,	109.39	
Insurance,	112.50	23,818.94
Paid the incumbents of the following Scholarships.		
Jackson Foundation,	$640.00	
Thomas Cary,	350.00	
George Chapman,	140.00	
Joshua Clapp,	125.00	
Nancy Kendall,	140.00	1,395.00
Paid beneficiaries from the **A. W. Buttrick** Fund,		550.00
		$25,763.94

Table No. V.

LAW SCHOOL.

RECEIPTS.

Income of the following Funds.			
Law School Balance,		$349.08	
Nathan Dane,		814.28	
Benjamin Bussey Professorship,		1,239.77	
Isaac Royall,		431.23	
New Professorship.			
From special investment,	$4,500.00		
Interest,	239.37	4,739.37	
Law School Book Fund,		1,655.49	
John Foster, income for Law students every third year,		163.99	
Benjamin Bussey Trust (¼ of net income for use of this School),		2,819.24	12,212.45
Term Bills.			
For instruction,			20,700.00
Sale of books,			9.32
			$32,921.77

TABLE V., CONTINUED.

PAYMENTS.

For Salaries for Instruction,	$20,250.00	
Librarian and Assistants,	2,945.75	
Janitors, cleaning, &c.,	1,078.99	
Books and binding,	2,825.39	
Fuel,	934.50	
Gas,	511.96	
Printing	335.00	
Scholarships,	1,200.00	
Labor, repairs, and improvements,	1,159.90	
Stationery and postage,	141.21	
Freight, diplomas, and sundries,	99.24	
Water rates,	53.92	
Furniture,	327.92	
Account of new building,	33,084.40	
Services of examiners and proctors,	72.00	
Proportion of expenses of Bursar's office,	284.00	
" " " " Gymnasium,	760.48	
Insurance,	115.00	$66,179.66

TABLE No. VI.

MEDICAL SCHOOL.

RECEIPTS.

Income of the following Funds.			
Medical School, balance,		$3,664.24	
Jackson Medical,		992.28	
Warren, for Anatomical Museum,		632.96	
Ward Nicholas Boylston, for Medical Prizes,		193.82	
Ward Nicholas Boylston, for Medical Books,		124.44	
George C. Shattuck,		885.57	
Hersey Professorship, two-fifths income of the fund,		450.44	
Medical Library Fund. Interest,	$145.38		
Balance of fines and old deposits,	90.25	235.63	
Quincy Tufts,		103.40	
Edward M. Barringer. Interest,	$1,288.00		
From special investment,	50.00	1,338.00	
Henry Harris, ½ of income,		623.81	
			9,244.59
From students for instruction,		48,287.00	
" " for graduation fees,		1,650.00	
" " in Chemical Laboratory, breakage and chemicals,		1,285.59	
" " in Practical Anatomy, for material,		329.00	
			51,551.59
Subscriptions to the Building Fund,			2,000.00
Use of lecture room by Medical Society,			50.00
			$62,846.18

TABLE VI., CONTINUED.

PAYMENTS.

Boylston Medical Prizes. Advertising,	$56.00	
Warren Anatomical Museum.		
Expenses, Insurance, and additions to collection,	656.89	
Swett Laboratory,	69.87	
Chemical Laboratory,	1,976.26	
Physiological Laboratory,	400.00	
Practical Anatomy and Surgery,	1,870.11	
Pathological Anatomy,	20.05	
Descriptive "	32.65	
Obstetrics,	252.75	
Histology,	125.00	
Materia Medica,	212.33	
Bandaging,	67.90	
Salaries for instruction,	38,470.44	
Furniture and fittings,	3,448.70	
Scholarships,	1,300.00	
For account of new building,	35,969.07	
		84,928.02
General Expenses.		
Advertising and catalogues,	$987.38	
Alcohol,	202.40	
Celebration,	1,202.94	
Cleaning,	767.79	
Diplomas,	77.18	
Faculty meetings,	53.94	
Firemen's Relief Association,	100.00	
Fuel,	2.532.96	
Gas,	933.48	
Insurance,	237.50	
Legal services,	249.26	
Moving furniture, &c.,	99.75	
Printing,	681.88	
Rent of rooms (in part) for Pathological specimens,	150.00	
Services and wages,	4,045.54	
Stationery, postage, and sundries,	249.92	
Water rates,	478.50	13,050.42
		$97,978.44

TABLE No. VII.

DENTAL SCHOOL.

RECEIPTS.

Income of Subscription Fund,	$60.85	
From Students,	4,960.00	
Infirmary,	949.06	
Laboratory,	160.00	
Rent of a part of the School building,	200.00	
		$6,329.91

TABLE VII., CONTINUED.

PAYMENTS.

Advertising and catalogues,	$376.76	
Care of rooms and cleaning,	377.38	
Drugs, chemicals, and sundries,	108.80	
Diplomas,	11.95	
Fuel,	155.90	
Gas,	76.68	
Gold foil and metals,	542.79	
Instruments and apparatus,	344.87	
Insurance,	32.00	
Interest on debt,	819.54	
Moving furniture, &c.,	24.00	
Printing,	72.45	
Repairs and improvements,	1,379.54	
Salaries for instruction,	2,981.00	
Stationery and postage,	55.15	
Taxes,	113.10	
Water rates,	53.00	
		$7,524.91

TABLE No. VIII.

LAWRENCE SCIENTIFIC SCHOOL, AND MUSEUM OF COMPARATIVE ZOÖLOGY.

RECEIPTS.

Income of the following Funds.

Professorship of Engineering,		$2,006.32	
Professorship of Chemistry,		147.91	
Abbott Lawrence,		3,181.41	
James Lawrence,		2,604.39	
John B. Barringer. Interest,	$1,472.78		
From special investment,	200.00	1,672.78	
Gray Fund for Zoölogical Museum,		2,585.00	
Sturgis Hooper,		5,170.00	
Agassiz Memorial. Interest,	$14,222.57		
From special investment,	1,039.02	15,261.59	
Teachers and Pupils,		392.61	
Humboldt,		400.21	
Permanent Fund for Museum of Zoölogy,		6,073.15	
			39,495.37
Term Bills, for Instruction,			3,970.00
			$43,465.37

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.

Gray,	$2,585.00
Agassiz Memorial,	13,620.51
Amount carried forward,	$16,205.51

TABLE VIII., CONTINUED.

PAYMENTS.

Amount brought forward,	$16,205.51	
Teachers and Pupils,	392.61	
Humboldt,	400.21	
Permanent,	6,073.15	
		23,071.48
Salaries for instruction,	15,781.41	
Expenses in Geology,	570.00	
Stationery and postage,	6.60	
Books, Engineering Department,	82.03	
Insurance,	90.00	
Fuel,	406.90	
Gas, freight, and sundries,	31.81	
Janitor and cleaning,	522.00	
Labor and repairs,	58.77	
Expenses Chemical Laboratory (part of),	324.97	
Scholarships,	450.00	
Interest on advances,	243.30	
Water rates,	48.45	
Proportion of expenses of Bursar's office,	50.59	
“ “ “ “ Gymnasium,	135.44	
		18,802.27
		$41,873.75

TABLE No. IX.

OBSERVATORY.

RECEIPTS.

Income of the following Funds.		
Observatory, balance,	$158.87	
Edward B. Phillips,	5,702.20	
James Hayward,	1,085.70	
David Sears,	1,192.46	
Josiah Quincy,	641.65	
James Savage (½ of net income),	935.70	
Charlotte Harris,	103.40	
Thomas G. Appleton,	82.31	
New Endowment,	1,811.15	11,663.44
From sale of time signals,	2,895.83	
“ “ “ Observatory Annals,	30.00	
“ “ “ grass,	35.00	2,960.83
		$14,624.27

PAYMENTS.

Salaries and wages,	$13,680.80
Cleaning and care of Observatory,	274.64
Gas,	95.92
Instruments and apparatus, including repairs on same,	1,331.05
Amount carried forward,	$15,382.41

TABLE IX., CONTINUED.

PAYMENTS.

Amount brought forward,	$15,382.41	
Repairs and improvements on buildings and grounds,	688.89	
Stationery, postage, and telegraphing,	452.19	
Fuel,	44.00	
Books and binding,	205.99	
Water rates,	46.67	
Printing,	2,180.52	
Freight, chemicals, and sundries,	138.96	
Furniture,	101.12	
Advertising,	12.00	
Insurance,	193.50	$19,446.25

TABLE No. X.

BUSSEY INSTITUTION.

RECEIPTS.

From **Bussey** Trust (½ net income),	$5,638.49	
From **Bussey** Building Fund,	149.00	
Fees for Instruction,	450.00	
Sale of coal to Arboretum,	82.00	
Sale of wood and sundries,	13.97	
From **Arnold** Arboretum for rent of greenhouses,	50.00	
Board of horses, cattle, &c.,	1,367.46	$7,750.92

PAYMENTS.

For Salaries,	$5,505.33	
Books,	23.48	
Stationery and postage, cleaning, gas, &c.,	40.14	
Fuel for school building,	120.13	
Services and wages,	1,090.01	
Horticultural Department, expenses,	715.68	
Repairs and improvements,	1,069.54	
Grain,	304.14	
Insurance,	450.75	
Subscription to Veterinary Hospital, 2 years,	20.00	
Advertising,	95.95	
Printing,	15.50	
Horse shoeing,	62.75	
Seeds,	21.20	
Horse,	70.00	
Farming tools,	470.23	$10,074.83

Bussey Building Fund.

Receipts.

Income of unexpended balance of Fund,	$149.00

Payments.

Income carried to Bussey Institution,	$149.00

Table X., continued.

James Arnold Fund.

Receipts.

Income of Fund,		$7,863.36

Payments.

19/20 of income carried to Arnold Arboretum,		$7,470.19

Arnold Arboretum.

Receipts.

Income of unexpended balance of Fund,	$651.21	
From James Arnold Fund,	7,470.19	
Sale of wood, grass, &c.,	415.00	
		$8,536.40

Payments.

Salary of Director and Assistant,	$3,000.00	
Expenses of Arboretum,	6,129.89	
		$9,129.89

School of Veterinary Medicine.

Receipts.

Gift from Mass. Society for Promoting Agriculture,	$2,000.00	
Term bills, for instruction,	970.00	
Subscriptions to Veterinary Hospital,	1,300.00	
Fees from Hospital,	5,209.59	
" " Forge,	758.20	
Rent of "	183.34	
		$10,421.13

Payments.

Salaries and wages,	$5,001.40	
Apparatus, fixtures, &c.,	634.86	
For account of new building,	5,640.63	
Rent,	1,226.05	
Hay, straw, and grain,	1,455.93	
Shoes, nails, iron, tools, &c.,	292.90	
Printing and advertising,	203.96	
Postage, stationery, drugs, and sundries,	852.19	
Repairs,	108.18	
Subjects,	45.00	
Fuel,	160.97	
Water,	47.50	
Gas,	79.74	
Telephone,	120.34	
Taxes,	79.75	
Board of horses, &c. at Bussey Institution,	502.52	
Interest on advances,	123.20	
		$16,575.12

TABLE No XI.

MISCELLANEOUS FUNDS.

Bussey Trust.

Receipts.

Net income from Real Estate,		$17,576.98

Payments.

Annuities,	$6,300.00	
One-half of the remaining income to Bussey Institution,	5,638.49	
One-quarter " " " Divinity School,	2,819.25	
" " " " " Law School,	2,819.24	
		$17,576.98

Gray Fund for Engravings.

Receipts.

Interest on Fund,	$834.75	
From sale of catalogues, &c.,	49.00	
		$883.75

Payments.

To the Treasurer of the Museum of Fine Arts,	$500.00	
Balance of account for purchase of engravings in 1881,	8.22	
		$508.22

Annuity Funds.

Receipts.

Gore, interest,	$1,075.67	
Lucy Osgood, interest,	307.93	
Anonymous Observatory, income from special investm't,	720.00	
Bemis, interest,	2,585.00	
		$4,688.60

Payments.

Gore, annuities,	$842.45	
Lucy Osgood, annuity,	420.00	
Anonymous Observatory, annuity,	720.00	
Bemis, annuity,	2,797.50	
		$4,779.95

Daniel Williams Fund.

Receipts.

Interest on Fund,		$829.84

Payments.

Treasurer of Herring Pond Indians,	$298.89	
" " Mashpee Indians,	597.79	
		$896.68

Sarah Winslow Fund.

Receipts.

Interest on Fund,		$249.92

Payments.

Minister at Tyngsborough, Mass.,	$131.32	
Teacher at " "	131.32	
Commission on income credited to University,	6.73	
		$269.37

Table XI., continued.

James Savage Fund.

Receipts.

Interest on Fund, ...		$2,171.40

Payments.

Scholarship, ...	$300.00	
One-half the remaining income to Library, ...	935.70	
" " " " Observatory, ...	935.70	
		$2,171.40

Bright Legacy.

Receipts.

Interest on Fund, ...		$2,585.00

Payments.

One-half income to **Bright** Book Fund, ...	$1,292.50	
One-half income to Scholarship Fund, ...	1,292.50	
		$2,585.00

Sundry Accounts.

Receipts.

From **Thomas Jefferson Coolidge** for the Jefferson Physical Laboratory, ...	$65,000.00		
Interest on the same, ...	701.38	$65,701.38	
Gospel Church Fd. (accumulat'g). Interest on Fund,		138.04	
Robert Troup Paine Fd. " From special investm't,		1,196.39	
Advances to			
Dental School, from general investments,		1,195.00	
Observatory, " " "		876.07	
School of Veterinary Medicine, " "		5,813.21	
Law School Building Fund, " "		7,431.07	
Bussey Institution, " "		2,273.41	
			$84,624.57

Payments.

Jefferson Physical Laboratory, spent on building, .	$73,468.59	
Annuity for Class of 1802, ...	120.00	
George B. Dorr Fund, net loss from change of special investment, ...	637.50	
Advances repaid, to		
Agassiz Memorial Fund, ...	1,641.08	
Lawrence Scientific School, ...	350.54	
Baring Bros. & Co., balance paid off, ...	6,121.86	
		$82,339.57

GENERAL SUMMARY OF THE TABLES.

			Receipts.	Payments
Table	I.	University,	$35,586.34	$40,679.03
Table	II.	College,	270,083.85	248,365.05
Table	III.	Library,	28,401.54	43,923.79
Table	IV.	Divinity School,	25,274.81	25,763.94
Table	V.	Law School,	32,921.77	66,179.66
Table	VI.	Medical School,	62,846.18	97,978.44
Table	VII.	Dental School,	6,329.91	7,524.91
Table	VIII.	Lawrence Scientific School and Museum of Comparative Zoölogy,	43,465.37	41,873.75
Table	IX.	Observatory,	14,624.27	19,446.25
Table	X.	Bussey Institution,	7,750.92	10,074.83
		Bussey Building Fund,	149.00	149.00
		James Arnold Fund,	7,863.36	7,470.19
		Arnold Arboretum,	8,536.40	9,129.89
		School of Veterinary Medicine,	10,421.13	16,575.12
Table	XI.	Bussey Trust,	17,576.98	17,576.98
		Gray Fund for Engravings,	883.75	508.22
		Annuity Funds,	4,688.60	4,779.95
		Daniel Williams Fund,	829.84	896.68
		Sarah Winslow Fund,	249.92	269.37
		James Savage Fund,	2,171.40	2,171.40
		Bright Legacy,	2,585.00	2,585.00
		Sundry Accounts,	84,624.57	82,339.57
			$667,864.91	$746,261.02
				667,864.91
			Balance	$78,396.11

Which is the net decrease of the Funds and balances, excluding gifts for capital account, as also shown on page 25.

Certificate of the Joint Committee of the Corporation and Overseers of Harvard College, for examining the Books and Accounts of the Treasurer entered in the Journal kept by him.

We, the undersigned, a joint committee of the Corporation and Overseers of Harvard College to examine the books and accounts of the Treasurer for the year ending August 31, 1884, have examined and audited the Cash book from pages 202 to 253, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were received by him and on hand at the beginning of said year, are now in his possession, or are fully accounted for by entries made therein. We have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

We have carefully examined all notes, bonds, mortgages, and other securities invested during the said year, and are of opinion that all such investments have been judiciously made and are amply secured.

We have in like manner satisfied ourselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

The Committee have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

E. W. GURNEY,	*Committee on the part of the Corporation.*
HENRY P. KIDDER, AMOS A. LAWRENCE, SOLOMON LINCOLN, CHARLES HENRY PARKER, ISRAEL M. SPELMAN, GEORGE B. CHASE,	*Committee on the part of the Board of Overseers.*

Boston, January 12, 1885.

From Harvard University

ANNUAL REPORTS

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1884-85.

CAMBRIDGE, MASS.
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PRESIDENT'S REPORT FOR 1884-85.

To the Board of Overseers: —

The President of the University has the honor to submit the following Report for the academic year 1884–85; namely, from Sept. 25th, 1884, to Oct. 1st, 1885: —

Henry Lawrence Eustis, Professor of Engineering and Dean of the Scientific Faculty, died Jan. 11th, 1885, in the sixty-sixth year of his age, and the thirty-sixth of his service as professor in the University. Professor Eustis's gifts as a teacher were great; and he has left behind among his pupils a keen sense of obligation for the intellectual benefits they received from him. He had an extraordinary power of clear, concise, logical statement, a quick appreciation of a pupil's difficulties, and a steady purpose to be thorough himself and to make his pupils thorough. Though reserved by nature, to his pupils he was always accessible, frank and cordial. He is entitled to be remembered as one of the founders of the Scientific School; for, as first Professor of Engineering, he planned, and for thirty-five years directed, the whole course of study in that important department of the School.

Tables of the resignations and appointments of the year will be found in the Appendix (pp. 181–185).

The President and Fellows very much regretted the withdrawal from their board at the beginning of the year of Alexander Agassiz, Esq., who had served as a Fellow since 1878 to the great advantage of the University. The vote in which they expressed their regret and their gratitude will be found in the Appendix (p. 185).

It is now sixty years since the Faculty of Harvard College began to elaborate (see the Report for 1883–84) a system of instruction and discipline for students in the liberal arts which has come to be known as the elective system, because it permits each student, under limitations and guidance which are partly artificial but chiefly natural, to choose his subjects of study. Election of studies in some degree has now been so generally adopted in American colleges that discussion may fairly be confined to the consideration of the proper limits to students' choice among liberal studies, and of the best aids to students in exercising their liberty of choice. As a contribution to this legitimate discussion, it is proposed to exhibit in the following pages, as completely as may be, the actual working of the Harvard elective system in two College classes (those of 1884 and 1885) during the four years 1881–82—1884–85.

Two preliminary observations need to be made. In the first place, the elective system is not an abandonment of system. It allows every student to choose what the subjects of his study shall be; but the amount * of his work is prescribed, and its quality † tested by means of periodical examinations, essays, laboratory work, and personal intercourse between teacher and student. Not only does a minimum of attainment remain prescribed under the elective system; but competitive inducements to strenuous study, such as rank-lists, scholarships, grades of distinction in the Bachelor's degree, and "honors," "highest honors," and "honorable mention at graduation" are made use of, perhaps to an extreme degree. It is

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* The following studies are prescribed: — For Freshmen — Rhetoric and English composition, German or French, chemistry (lectures), and physics (lectures); for Sophomores, Juniors, and Seniors — themes and forensics. In addition to the prescribed studies every Freshman is required to pursue elective studies amounting to three full courses, and every Sophomore, Junior, and Senior four elective courses or their equivalent. By a "full course" is meant a course of instruction in a single subject which may fairly be supposed to occupy one quarter of a student's whole working time for one year; but elementary courses take less time. The instructor ordinarily meets his class, in a full course, three times a week, but sometimes in advanced or difficult courses only twice. (Catalogue 1884–85, pp. 73 and 77.)

For the classes of 1884 and 1885 the amount of prescribed studies was much larger.

† "No student will be recommended for the degree of Bachelor of Arts until he has attained two fifths of the maximum mark in each of the prescribed studies of the College course, and of the prescribed number of elective studies, and has moreover attained one half of the total maximum mark for each year of the whole course from the time of his admission." (Catalogue 1884–85, p. 78.)

emphatically a method in education, which has a moral as well as an intellectual end, and is consistent with a just authority while it grants a just liberty. In studying, or criticising the working of the system it is important to discriminate clearly between results attributable to the main principle of allowing each student to choose his subjects of study, and results attributable to the administrative methods used to exact from each student a reasonable amount of work and to test or estimate the quality of that work. To give a satisfactory total result, not only must the fundamental principle of freedom of choice be sound, but all the administrative methods must be well-devised and well-executed. Now at Harvard College during the past twenty years the methods of administration have necessarily been tentative; because the policy of the institution was changing, and its resources expanding, so that each year brought new problems to the front. The administration has gradually improved; but it is still capable of indefinite improvement.

In the second place, election of studies in some large measure by the individual student, or selection for him, is absolutely inevitable; for no single student can take in four years more than a small fraction of the instruction given at Cambridge in the liberal arts. The possible alternative of ceasing to give advanced instruction at the University need not be considered. In 1884–85 eighty teachers were employed in Harvard College, exclusive of laboratory assistants, and these eighty teachers gave 431½ hours per week of stated public instruction (see Dean's Report below, p. 98), in addition to which there was a mass of untabulated, irregular, and extra instruction given partly in private and partly in public. Since no student can take in four years more than a tenth part of the instruction offered him, the College must either give each student his choice of studies, or find some satisfactory way of assigning to each student in their proper order the studies most suitable for him. Inasmuch as any conceivable method of assigning studies to an individual would take account of his tastes and capacities, and endeavor to enlist his will, the question between these alternatives is one of degree, feasibility, and expediency. If election by the individual, with the natural aids, works well in practice, it is of course to be preferred to any method of selection for the individual by an authority outside himself. How such election of subjects of study works, it is the object of the following pages to exhibit.

The young men, whose choice of studies during three years, is exhibited in the tables which begin on p. 9, were on the average nineteen years old when they entered College (for the details see Appendix, p. 188), and therefore twenty years old when they made their first choice of studies at the beginning of the Sophomore Year. The schools from which they came will be found under the years 1880 and 1881 in the table of schools from which boys entered the College in the years 1876 to 1885 inclusive (see Appendix, pp. 189–193). Beside meeting the requirements of the admission examination,* these two classes had spent the Freshman year in the study (at that time prescribed) of Greek, Latin, mathematics, physics, French or German, and chemistry (lectures).

The Dean's Report contains every year a complete list of

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* The manner in which they met the requirements as regards the elective subjects was thus exhibited in the Dean's Report: — It will be observed that four fifths of them presented the maximum subjects in both Greek and Latin.

	1880.		1881.	
Whole number of candidates	236		253	
Number offering elective		per cent.		per cent.
Latin	222	94	239	94
Greek	187	79	203	80
Mathematics	46	19	46	18
Physical Science	45	19	47	18

Number of candidates who offered elective	1880.	1881.
Latin, Greek, Mathematics, and Physical Science	2	4
Latin, Greek, and Mathematics	15	14
Latin, Greek, and Physical Science	7	5
Latin, Mathematics, and Physical Science	2	1
Greek, Mathematics, and Physical Science	0	1
Latin and Greek	159	177
Latin and Mathematics	17	13
Latin and Physical Science	20	25
Greek and Mathematics	0	2
Greek and Physical Science	4	0
Mathematics and Physical Science	10	11
	236	253

the College courses of instruction for the year reported on, — a list which gives for each course the subject, the text-books if any, the name of the instructor, the number of hours of instruction per week, the number of students attending it, and the classes or departments to which the students belonged. The Catalogue also contains every year a list of the courses of instruction for the current year, with some descriptions and directions not found in the Dean's Report, but without the number of students attending each course. These sources of information will be found useful by persons who wish to go beyond the facts reported in the following tables.

THE SELECTION OF STUDIES MADE DURING THREE CONSECUTIVE YEARS BY EVERY MEMBER OF THE COLLEGE CLASS OF 1884, AND BY EVERY MEMBER OF THE COLLEGE CLASS OF 1885, WHO WAS A MEMBER OF THE CLASS DURING THE SOPHOMORE, JUNIOR, AND SENIOR YEARS.

For these two classes all the studies of the Freshman year were required, as were also Rhetoric, and certain exercises in writing English in the later years of the course. In the following tables the figures in heavy type denote the relative rank of the student in the class, and are followed in the same horizontal line by his average mark, stated in percents, on all his courses for each year. Since only those members of the two classes who chose their studies for three successive years are included in the tables, only 350 individual cases are obtained from classes which together graduated 373 strong. The courses chosen by each student are tabulated in a form which exhibits at a glance the continuity or discontinuity of his studies throughout the three years. The figure at the side of each course is the number of the course, or of the equivalent course, in the list of elective studies for 1884–85 in the Dean's Report, below, pp. 74–94. In English, Philosophy, and Natural History, and also in certain single courses, the subject-matter of the course is given: e. g. "Eng. Comp. 5" = Course 5 in English; "Ethics 4" = Course 4 in Philosophy; "Drawing 1" = Course 1 in Fine Arts; "R. Phil. 11" = Course 11 in French; etc. Full courses are printed in Roman type; half-courses in Italics, except in the Sophomore year of the class of 1884, when the discrimination of all courses into full or half-courses (according to the estimated amount of work in each) had not been introduced. In that year (1881–82) italics indicate courses which had less than three hours of recitation weekly. *Eng. Comp.* 5 is given in italics, when one half of the course is substituted for Junior Themes; and the following courses, which have three hours of recitation weekly, have been sometimes taken as courses of two hours, and in such cases are given in italics: *Physics* 1, *Phys. Geo.* 1, *French* 4, *Geology* 4, *Latin* 1. The following courses can be taken more than once, since their topics are changed entirely from year to year: Greek 5, Greek 9, English 2, Eng. Comp. 5, French 4. [indicates an *extra* course: i. e. one which is not counted by the student toward his degree. (indicates a course in which the student failed to pass the examinations, so that he was obliged to take an additional course in a subsequent year.

A small letter above the line refers to a corresponding note in the list of notes given below; and in all such cases the figure at the side of the course is the number of the course in the list of Courses of Instruction contained in the Catalogue *for the year under which the course is mentioned.* The foot-notes on each page indicate the courses taken by the student in his Freshman year, in place of certain Freshman studies which he had anticipated.

NOTES.

[a] Before 1884–85, English 1 was a combination of English 1 and 11 ['84–'85].

[b] Philosophy 2 ['82–'83] and Philosophy 1 ['83–'84] are each equivalent to the half-course Philosophy 2 ['84–'85] and the Logic of Philosophy 1 ['84–'85]. All these courses are elementary and differ only in details.

[c] German 4 and 6 have no place in the Catalogue of 1884–85.

[d] Before 1883–84, Geology 4 was a full course, but could be taken as two hours.

[g] Before 1883–84, English 7 was equivalent to a combination of English 7 and 8 ['84–'85].

[h] No exact equivalent in 1884–85. The subject-matter of this course in any year previous to 1884–85 can be found in the Catalogue for that year.

[k] In 1881–82, History 1 and 2 together were equivalent to History 1 ['84–'85].

[m] In 1881–82, Mathematics 3 and 4 together were equivalent to Mathematics 3 ['84–'85].

[n] In 1882–83, Music 1 was equivalent to a combination of Music 1 and 4 ['84–'85].

ELECTIVE STUDIES OF THE CLASS OF 1884.

Sophomore Year. 1881–82.	Junior Year. 1882–83.	Senior Year. 1883–84.	Sophomore Year. 1881–82.	Junior Year. 1882–83.	Senior Year. 1883–84.
1 99 *Philos.* 1 *Latin* 4 *Greek* 1^{h} English 1^{a} English 2	98 Philos. 5 Philos. 6 Greek 8 *Eng. Comp.* 5 *French* 8	97 Ethics 4 Philos. 7 History 10 Fine Arts 8	**8**[2] 94 *Greek* 2 *Greek* 5 *Greek* 3 *Latin* 3 *Latin* 4 Latin 5 *History* 8	96 Greek 7 Greek 9 Latin 6 History 4	93 *Greek* 6 Greek 8 *Greek* 12 Latin 8 [Sanskrit 1
2 96 German 5^{h} German 2 [*German* 4^{h} *Greek* 5 French 2 *Latin* 2^{h} [Botany 3	97 Sanskrit 1 Hebrew 1 Arabic 7 [Greek 2 French 4	95 [Sanskrit 2 Hebrew 2 Aramaic 3 Assyrian 4 [*Semitic* 6^{h} Arabic 8	**9**[3] 92 Polit. Ec. 1 *Philos.* 1 *History* 2^{k} German 2 French 1	94 Polit. Ec. 2 Rom. Law 1 History 9 History 13	95 Polit. Ec. 8 *Polit. Ec.* 6 *Polit. Ec.* 7 History 15
3 97 *Greek* 2 *Greek* 3 *Latin* 2^{h} *Latin* 3 *Math.* 2 *Math.* 4^{m} *History* 2	94 *Greek* 5^{h} Greek 9 *Latin* 9 Polit. Ec. 1 Math. 5	— Greek 5 Greek 8 Latin 6 Fine Arts 8	**10**[4] 89 Chem. 1 Botany 3 *German* 4^{h} German 5^{h} French 2	95 Chem. 3 Chem. 4 Zoölogy 2 Biology 5	99 Chem. 2 Chem. 5 Chem. 6 History 1
4[1] 87 Chem. 1 Botany 3 *Math.* 2 *Math.* 3^{m} *Math.* 4^{m}	97 Chem. 2 Phys. Geo. 1 Zoölogy 2 Biology 5	97 Zoölogy 6 Geology 8 Palaeont. 14 Geology 18	**11** 90 Botany 8 *Greek* 2 Latin 1 *Math.* 2 German 2	97 Phys. Geo. 1 Zoölogy 2 Biology 5 Chem. 1	91 Zoölogy 6 Geology 8 Palaeont. 14 Geology 18
5 96 *Zoölogy* 2 Botany 3 *Geology* 4^{d} Physics 2 German 2	— Phys. Geo. 1 Biology 5 Geology 8 Geology 16	95 Zoölogy 6 Embryol. 9 Palaeont. 14 Chem. 2	**12**[5] 88 *Greek* 1^{h} *Greek* 8 Latin 1 *Latin* 8 *History* 2^{k} English 1^{a}	93 Greek 9 Latin 6 Music 1^{n} History 11	93 Greek 8 Latin 8 Music 8
6 92 *Philos.* 1 Botany 3 Chem. 1 *Greek* 5 *Latin* 2^{h}	94 Philos. 6 Geology 4^{d} Polit. Ec. 1 History 4	96 Ethics 4 Geology 8 Polit. Ec. 2 History 13	**13** 90 *Greek* 2 *Greek* 5 *Greek* 3 Latin 1 *Latin* 3 German 2	94 History 8 History 13 Polit. Ec. 1 Zoölogy 2	91 History 12 Philos. 1^{b} Eng. Comp. 5 Fine Arts 3
7 89 French 2 *History* 2^{k} *Greek* 2 *Greek* 5 Latin 1	95 French 3 History 11 English 2 Philos. 2^{b}	98 Italian 1 English 1^{a} English 2 Philos. 6	**14** 93 *Greek* 2 *Greek* 3 Latin 1 *Latin* 3 English 1^{a} *Philos.* 1	93 Greek 9 Latin 6 [*Eng. Comp.* 5 [*English* 7^{g} Polit. Ec. 1 Philos. 5	94 *Greek* 6 Greek 8 *Latin* 7 Latin 8

In Freshman Year: —[1] *Math.* 1. — [2] Latin 1. — [3] *Greek* 5; *Greek* 3. — [4] French 1. — [5] German 5^{h}.

Sophomore Year.	Junior Year.	Senior Year.
15 91 *Philos.* 1 *Greek* 2 *Greek* 3 *Latin* 2^{h} *Latin* 3 *German* 4^{h} French 2	91 Ethics 4 Polit. Ec. 1 History 9 History 11	91 Polit. Ec. 2 Polit. Ec. 3 History 13 Rom. Law 1
16 90 [*Greek* 5 Latin 1 French 1 German 2 Chem. 1	93 *Greek* 3 *Latin* 3 French 3 [*English* 7^{g} Philos. 1 Polit. Ec. 1	95 Greek 7 Latin 8 French 4 Zoölogy 2 [*Geology* 4
17 90 Chem. 1 *Math.* 2 *History* 1^{k} German 2 French 1	94 Chem. 2 Chem. 3 Chem. 4 Phys. Geo. 1	95 Chem. 5 Chem. 6 Chem. 7 Geology 8
18 87 *History* 2 German 2 French 3 *Philos.* 2 *Physics* 3	89 History 9 History 13 Polit. Ec. 1 Ethics 4	96 History 12 History 15 Polit. Ec. 4 Rom. Law 1
19 87 Botany 3 *Greek* 5 German 2 Chem. 1 *English* 7^{g}	92 Zoölogy 2 Geology 4^{d} Polit. Ec. 1 Philos. 1	97 Phys. Geo. 1 Biology 5 Geology 8 Chem. 3
20 89 *History* 2 *Math.* 2 Chem. 3 Biology 5 *German* 3^{h}	90 History 11 History 13 Polit. Ec. 1 Geology 4^{d} [Surveying	89 History 12 Polit. Ec. 2 Polit. Ec. 4 Rom. Law 1
21 91 *History* 2^{k} *History* 2 French 1 Polit. Ec. 1 German 2	89 History 9 History 13 *French* 8 Polit. Ec. 2 Eng. Comp. 5	96 History 12 History 14 History 15 *Polit. Ec.* 6 *Polit. Ec.* 7
22 91 *Philos.* 1 *Greek* 1^{h} *Greek* 2 *Greek* 5 *Greek* 3 *Latin* 2^{h} *Latin* 3	92 Ethics 4 Philos. 5 Philos. 6 *Eng. Comp.* 5 *English* 7^{g}	90 Philos. 8^{h} English 1^{a} English 2 Zoölogy 2

Sophomore Year.	Junior Year.	Senior Year.
23 85 *Greek* 2 *Greek* 5 *Greek* 3 Latin 1 *Latin* 3 German 2	93 Greek 8 Latin 8 Zoölogy 2 Botany 3 [English 8 [German 4^{e}	90 Greek 9 Greek 13 Semitic 1 Philos. 6
24[6] 88 *Math.* 2 *Math.* 4^{m} *Physics* 1^{h} Chem. 1 French 1	94 Math. 1 Math. 5 Math. 6 Chem. 3	91 Math. 8 Math. 9 Math. 10 Polit. Ec. 1
25[7] 91 *Fine Arts* 7 *History* 2 History 7^{h} Italian 1 Phys. Geo. 1	— Fine Arts 3^{h} Fine Arts 3 German 2 German 4^{e}	96 Music 3 History 13 German 3 German 6^{e} German 7
26 89 *Philos.* 1 Polit. Ec. 1 French 1 German 2 *English* 7^{g}	94 Ethics 4 Philos. 5 Philos. 6 German 3^{h}	94 *Philos.* 3 Philos. 7 Philos. 8^{h} *History* 2 History 12
27 87 Chem. 1 *Physics* 1^{h} Biology 5 *German* 3^{h} French 1	91 Chem. 3 Chem. 4 Zoölogy 2 Botany 7	93 Chem. 2 Chem. 5 Zoölogy 6 Botany 3
28 89 *Greek* 2 *Greek* 3 Latin 1 [*Latin* 2^{h} *Latin* 3 English 1^{a} German 2	92 Greek 9 Latin 6 Philos. 1 Polit. Ec. 1	89 *Greek* 6 Greek 8 Latin 8 *Latin* 9 Polit. Ec. 2 [*Polit. Ec.* 5
29 84 *Philos.* 1 German 2 *Latin* 2^{h} *Greek* 2 Chem. 1	92 Philos. 6 French 2 Spanish 1 Eng. Comp. 5	96 Polit. Ec. 1 French 4 Spanish 2 History 13
30 89 *Philos.* 1 *Greek* 2 *Greek* 3 *Latin* 2^{h} *Latin* 3 German 2 *English* 7^{g}	88 Ethics 4 Philos. 5 Philos. 6 History 1	88 *Philos.* 3 *Philos.* 10 History 12 History 13 Polit. Ec. 1

IN FRESHMAN YEAR:—[6] *Math.* 3^{m}.—[7] *Fine Arts* 3^{h}; *Fine Arts* 6.

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
31 90 *Math.* 2 *Math.* 3^{m} *Math.* 4^{m} Math. 7 Physics 2	86 Math. 5 Math. 6 Physics 4 Polit. Ec. 1	93 Math. 8 Math. 10 Physics 5 Physics 6	**39** 82 *History* 2 French 1 *German* 8^{h} Physics 2 Chem. 1	88 History 9 *French* 8 Polit. Ec. 1 Philos. 1 *Eng. Comp.* 5	92 History 13 History 15 Polit. Ec. 2 Polit. Ec. 4 [*Polit. Ec.* 6 [*Polit. Ec.* 7
32 84 *Greek* 2 *Greek* 5 *Greek* 3 Latin 1 *Latin* 3 *History* 2^{k} *Math. C*	92 *Greek* 5^{h} Greek 7 Latin 5 Latin 6 *Latin* 7	92 *Greek* 6 Greek 8 Greek 9 Latin 8 *Latin* 9	**40** 83 Phys. Geo. 1 *Zoölogy* 2 Chem. 2 German 1 *Greek* 1^{h}	90 Botany 8 Geology 4^{d} Biology 5 Polit. Ec. 1	94 Botany 7 Palaeont. 14 History 1 Fine Arts 3
33 84 Polit. Ec. 1 *History* 2 German 2 *Math.* 1 *Physics* 1^{h}	86 Polit. Ec. 2 History 13 Rom. Law 1 Philos. 2^{b}	92 Polit. Ec. 4 *Polit. Ec.* 6 *Polit. Ec.* 7 History 14 Zoölogy 2	**41** 81 German 1 French 1 *Greek* 5 *History* 1^{k} *Philos.* 1	92 German 4^{c} Chem. 1 Zoölogy 2 Polit. Ec. 1	91 German 6^{c} Chem. 3 Biology 5 History 13
34 86 *Greek* 2 [*Greek* 5 *Greek* 3 Latin 1 *Latin* 3 German 2 French 2	92 Greek 7 Greek 9 Latin 6 Sanskrit 1	91 *Greek* 6 Greek 8 *Latin* 7 Latin 8 Philos. 6	**42**[9] 85 German 3 Italian 1 *Philos.* 1 Polit. Ec. 1 *Greek* 10	88 German 3^{h} Italian 2 History 11 Polit. Ec. 2	86 History 12 History 13 History 15 *Polit. Ec.* 5 *Polit. Ec.* 7
35 88 History 13 German 2 *Math.* 2 *Math.* 3^{m} *Math.* 4^{m}	89 History 11 German 3^{h} Philos. 2^{b} Polit. Ec. 1	75 History 12 Ethics 4 Philos. 5 Polit. Ec. 4	**43** 86 Phys. Geo. 1 Chem. 1 German 2 French 1	84 Biology 5 Chem. 3 Polit. Ec. 1 *Physics* 3 *English* 7^{g}	85 Zoölogy 6 *Philos.* 2 *Philos.* 3 History 4 [History 10 History 12
36 88 *History* 2^{k} *History* 2 *History* 3 *Greek* 2 *Greek* 5 [*Greek* 8 Latin 1 [*Latin* 8	88 History 9 History 13 Rom. Law 1 [Ethics 4 Polit. Ec. 1	90 History 10 History 12 History 14 History 15 [*Polit. Ec.* 6 [*Polit. Ec.* 7	**44**[10] 78 Geology 4^{d} Chem. 2 Physics 2 *Math.* 2 *Greek* 2 [Spanish 1	85 Geology 8 Zoölogy 2 Polit. Ec. 1 History 13	86 Palaeont. 14 *Polit. Ec.* 6 *Polit. Ec.* 7 History 12
37 77 *History* 2 History 4 *Math.* 2 Physics 1^{h} Chem. 1	85 History 10 History 11 Philos. 1 Phys. Geo. 1	94 History 12 History 13 History 15 Polit. Ec. 1	**45** 76 *History* 2^{k} *History* 2 *Latin* 2^{h} (*Greek* 2 German 2 *German* 4^{h}	86 History 9 History 13 Polit. Ec. 1 Philos. 2^{b} French 1	— History 12 History 14 History 15 Rom. Law 1
38[8] 75 Chem. 1 *Philos.* 1 (*History* 1^{k} German 6^{h} *Greek* 2	87 Chem. 3 Philos. 6 Italian 1 German 3^{h} Greek 5	90 Chem. 4 Fine Arts 3 Italian 2	**46**[11] 90 History 7^{h} German 5^{h} French 2 *Greek* 1^{h} *Greek* 10	92 History 13 German 3 French 3 Polit. Ec. 1	87 History 9 Philos. 6 *Geology* 4 Polit. Ec. 2 *Eloc.* 9

IN FRESHMAN YEAR: — [8] German 1. — [9] *Greek* 5; Ethics 4. — [10] Chem. 1. — [11] French 1.

Sophomore Year.	Junior Year.	Senior Year.
47 84 *History* 2[k] *History* 2 *History* 3 *Greek* 5 *Math.* 2 Chem. 1	85 History 9 Polit. Ec. 1 Philos. 1 Eng.Comp.5	86 History 13 Polit. Ec. 2 Philos. 6 Rom. Law 1
48 81 *Greek* 2 *Greek* 5 *Greek* 3 Latin 1 *Latin* 3 German 2	88 *Greek* 5[h] Greek 8 Latin 5 Latin 6 *Latin* 7	87 *Greek* 6 Greek 9 Greek 13 Latin 8 *Latin* 9
49 80 *History* 2 Polit. Ec. 1 *Math.* 1 *Physics* 1[h] Chem. 1	82 History 11 Polit. Ec. 2 Philos. 1 Eng.Comp.5	91 History 12 History 13 Zoölogy 2 *Geology* 4 *Elocution* 9
50 77 Chem. 1 Physics 2 German 1 French 2	87 Chem. 3 Polit. Ec. 1 German 4[c] Philos. 1	85 Botany 8 Biology 5 History 12 Ethics 4
51 81 *Math.* 1 *Math.* 4[m] Chem. 1 *Zoölogy* 2 German 2	80 Math. 2 History 1 Philos. 1 Fine Arts 6	87 History 9 History 12 *Philos.* 2 *Philos.* 3 Polit. Ec. 1
52 78 *Phys. Geo.* 1 German 1 French 1 *History* 2[k] Math. *C*	88 Zoölogy 2 Botany 3 Geology 4[d] Biology 5	83 Palaeont. 14 Botany 7 Geology 8 Chem. 1
53 80 German 1 Chem. 1 Italian 1 English 2	85 German 3[h] Chem. 3 Chem. 4 Zoölogy 2	83 German 6[c] Chem. 5 Chem. 6 *Geology* 4 *History* 2
54 81 German 2 *Greek* 2 *Greek* 5 *Greek* 3 Latin 1 *Latin* 3	81 German 3[h] German 4[c] Polit. Ec. 1 Philos. 2[b]	84 Spanish 1 History 13 Polit. Ec. 2 Ethics 4
55[12] 86 Music 2 Music 3 *Greek* 2 *Greek* 5 [*Greek* 3 *Latin* 2[h] [*Latin* 3	76 Music 5 Italian 1 Philos. 1 Geology 4[d]	86 *Music* 4 [Music 5 Music 6 History 10
56 78 Chem. 1 *Zoölogy* 2 *Math.* 2 German 2 French 1	83 Chem. 2 Chem. 3 Philos. 1 Polit. Ec. 1	79 Chem. 4 *Geology* 4 Geology 8 *Polit. Ec.* 7 Fine Arts 3
57 78 *History* 1[k] English 1[a] *Math.* 1 Botany 3 German 1	84 History 10 Philos. 1 Polit. Ec. 1 Chem. 1	82 History 13 Ethics 4 Philos. 6 Phys. Geo. 1
58 75 *History* 2[k] *History* 2 French 2 German 1 *Greek* 5	85 History 11 History 13 Polit. Ec. 1 German 4[c]	90 History 12 History 15 Polit. Ec. 2 *Polit. Ec.* 6 *Polit. Ec.* 7
59 79 *Math.* 2 *Math.* 3[m] *Math.* 4[m] Physics 2 German 2	88 Math. 5 Math. 6 Chem. 1 Philos. 1	83 Math. 8 Math. 9 Polit. Ec. 1 Physics 5
60 83 Chem. 1 *Zoölogy* 2 Botany *Physics* 1[h] [*Math.* 2 *German* 3[h]	83 Chem. 2 Geology 4[d] Biology 5 Polit. Ec. 1	89 Chem. 8 Zoölogy 6 Botany 7 Geology 8
61 78 *Philos.* 1 Polit. Ec. 1 *History* 2[k] German 2 French 1	84 Philos. 6 Polit. Ec. 2 History 11 History 13	86 *Philos.* 3 Philos. 5 *Polit. Ec.* 7 History 9 History 12
62 79 *History* 2[k] *Latin* 2[h] *Greek* 2 Spanish 1 Chem. 1	81 History 11 History 13 Polit. Ec. 1 Eng.Comp.5 *French* 8	83 History 12 Rom. Law 1 Polit. Ec. 4 *Polit. Ec.* 6 *Polit. Ec.* 7

IN FRESHMAN YEAR: — [12] French 3; [*Music* 1.

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
63 82 Chem. 1 Physics 2 *History* 2 *German* 3^h French 1	89 Chem. 2 Chem. 3 Zoölogy 2 Biology 5	75 Chem. 4 Chem. 5 Geology 18 Music 3	**71** 77 *History* 2^k German 1 English 2 Physics 2 *Greek* 10	71 History 11 German 4^c Polit. Ec. 1 Drawing 1	89 History 13 German 3 Polit. Ec. 4 *Drawing* 2 *Philos.* 2
64 78 Chem. 1 Physics 2 French 1 German 1	81 Chem. 3 Polit. Ec. 1 History 11 German 4^c	87 Botany 3 Biology 5 History 12 *Philos.* 2 *Philos.* 3	**72** 75 *History* 2^k *Math.* 2 Chem. 1 *Philos.* 1 German 2	77 History 9 History 13 Polit. Ec. 1 Rom. Law 1	80 History 12 History 14 Polit. Ec. 2 Ethics 4
65 — German (six hours) French (six hours)	73 Philos. 1 Polit. Ec. 1 Rom. Law 1 Fine Arts 4^h	88 History 9 History 10 History 13 Eng.Comp.5	**73** 82 *History* 1^k *History* 2 English 1^a *Greek* 1^h *Greek* 2 *Latin* 2^h	81 History 13 Fine Arts 6 Polit. Ec. 1 Ethics 4	72 History 10 Fine Arts 7 Polit. Ec. 3 Music 3
66 83 Chem. 1 Chem. 2 [*Zoölogy* 2 Botany 3 [Physics 1^h Physics 2	81 Chem. 4 Chem. 5 Geology 4^d Biology 5	85 Chem. 6 Chem. 9 Polit. Ec. 1 *Philos.* 2 *Philos.* 3	**74**[14] 78 German 3 Spanish 1 French 4 Physics 2	73 Geology 4^d Spanish 2 Fine Arts 4^h Polit. Ec. 1	86 German 6^h Italian 2 Fine Arts 3
67 76 German 1 Chem. 1 Botany 3 English 2	79 German 4^c Greek 2 *Greek* 3 Latin 1 *Latin* 3	73 Polit. Ec. 1 Greek 5 Greek 8 Latin 5	**75**[15] 73 *History* 2^k *History* 2 *Latin* 2^h *Latin* 3 French 4 Drawing 1	72 History 11 Philos. 1 Polit. Ec. 1 Eng.Comp.5	80 History 13 Philos. 6 Polit. Ec. 2
68[13] 81 *Greek* 1^h German 3 *Philos.* 1 French 8 *Latin* 2^h	70 Greek 8 Ethics 4 Philos. 5 Italian 1	85 Greek 9 German 6^c Spanish 1	**76** 74 *Latin* 2^h *Greek* 1^h German 1 *Philos.* 1 Chem. 1	71 Fine Arts 6 Geology 4^d English 2 Polit. Ec. 1	86 Fine Arts 7 Botany 3 German 4^c History 5
69 80 *Zoölogy* 2 *Greek* 2 *Greek* 5 [*Greek* 3 *Latin* 2^h *Latin* 3 German 2	85 Botany 3 Geology 4^d Biology 5 French 2	86 Zoölogy 6 Botany 7 Chem. 1 Spanish 1	**77** 79 German 1 *Philos.* 1 *History* 2^k *English* 7^g *Greek* 1^h *Latin* 2^h	75 German 3^h Ethics 4 Philos. 6 Polit. Ec. 1	86 German 6^c Fine Arts 3 History 10 Eng.Comp.5
70 68 *Greek* 2 *Greek* 3 *Latin* 3 Latin 6 German 2 (Chem. 1	74 Latin 4 Latin 8 History 11 History 13	81 Greek 5 Greek 8 Latin 12 *Philos.* 3 Fine Arts 3	**78** 74 *History* 2 German 1 French 2 Chem. 1 *Greek* 5	80 History 10 History 13 [French 3 Polit. Ec. 1 Latin 5	78 History 5 History 9 Fine Arts 7 Polit. Ec. 3

IN FRESHMAN YEAR: — [13] French 1. — [14] Ital. 1. — [15] *Greek* 5; *Greek* 3.

Sophomore Year.	Junior Year.	Senior Year.
79 76 German 1 *German* 4^{h} *Philos.* 1 *Greek* 5 *Greek* 3 *Latin* 2^{h} *Latin* 3	78 Hebrew 1 German 4^{c} Philos. 5 English 2	88 Hebrew 2 Aramaic 3 Ethics 4 English 2
80 70 Chem. 1 *History* 2^{k} *History* 2 German 1 *Physics* 1^{h}	76 Chem. 3 Polit. Ec. 1 Philos. 1 German 4^{c}	85 Zoölogy 2 *Geology* 4 Biology 5 German 3 *Elocution* 9
81[16] 73 Chem. 1 *Zoölogy* 2 *French* 4 *Music* 1 Physics 2	71 Chem. 2 Phys. Geo. 1 Biology 5 History 13	82 Chem. 3 Botany 3 Botany 7 Music 3
82 76 German 1 *German* 4^{h} French 1 Latin 1 *History* 2	79 German 4^{c} French 2 Philos. 2^{b} Drawing 1	82 Polit. Ec. 1 Polit. Ec. 4 *Polit. Ec.* 6 History 12 *Geology* 4
83 82 Physics 2 Chem. 3 *History* 2 *Math.* 2 *German* 8^{h}	62 Physics 4 Physics 6 Physics 7 Math. 5	74 Physics 3 Physics 5 Physics 7 *Philos.* 2 *Philos.* 3
84 69 *English* 7^{g} German 1 *History* 2^{k} French 2 Physics 2	81 English 1^{a} German 4^{c} History 11 French 3	91 English 2 German 6^{c} History 13 Botany 3
85 68 *History* 2 *History* 3 History 12 *Greek* 5 French 8	84 History 4 History 10 History 11 Polit. Ec. 1	91 History 8 History 9 History 14 Fine Arts 7
86 70 Chem. 1 French 1 German 1 *History* 2 *English* 7^{g}	74 Chem. 2 Chem. 3 Polit. Ec. 1 Philos. 1	83 Chem. 4 *Geology* 4 Geology 8 Geology 18 *Mech. Draw.*

Sophomore Year.	Junior Year.	Senior Year.
87[17] 75 Chem. 1 Physics 2 *Math.* 2 English 2 *Philos.* 1	79 Chem. 3 Chem. 4 Phys. Geo. 1 History 13	83 Chem. 2 Chem. 5 Chem. 6 *Geology* 4 *Elocution* 9
88 64 *Phys. Geo.* 1 *Math.* C Chem. 1 Physics 2 *History* 2^{k}	83 Zoölogy 2 Geology 4^{d} Chem. 2 Polit. Ec. 1	84 Botany 3 Geology 8 Palaeont. 14 Geology 18
89 72 Chem. 1 *Phys. Geo.* 1 *Zoölogy* 2 German 1 *History* 2^{k}	72 Chem. 3 Music 3 Philos. 1 German 4^{c}	76 Botany 3 Geology 8 *Philos.* 2 *Philos.* 3 Fine Arts 3
90 74 Chem. 1 *Zoölogy* 2 *Greek* 5 Latin 1 German 1	83 Chem. 3 Phys. Geo. 1 Botany 3 Latin 5	74 Chem. 4 Chem. 5 Geology 8 *Philos.* 2 *Philos.* 3
91 74 *Philos.* 1 *Math.* 2 Chem. 1 French 1 *History* 2^{k}	82 Ethics 4 Philos. 6 Geology 4^{d} Polit. Ec. 1	74 *Philos.* 2 Palaeont. 14 Geology 18 *French* 8 Fine Arts 3
92 71 *History* 2 German 1 *English* 7^{g} Physics 2 Phys. Geo. 1	78 History 11 History 13 Fine Arts 6 English 2	89 History 12 Polit. Ec. 4 Fine Arts 7 Music 3
93 75 Botany 3 Chem. 1 French 1 Physics 1^{h}	73 Biology 5 Chem. 3 Polit. Ec. 1 Philos. 1	80 *Geology* 4 Zoölogy 6 History 13 Fine Arts 3 *Elocution* 9
94 74 *Phys. Geo.* 1 *Zoölogy* 2 French 1 German 1 *History* 2^{k}	72 Botany 3 Chem. 1 Polit. Ec. 1 German 4^{c}	78 Geology 8 Chem. 3 Polit. Ec. 4 Fine Arts 3
95 69 *History* 2^{k} *History* 2 English 2 *Music* 1 Chem. 1	86 History 10 Philos. 1 Fine Arts 4^{h} Music 2	88 History 5 History 9 Fine Arts 7 Music 3

IN FRESHMAN YEAR: —[16] French 4. —[17] French 1.

Sophomore Year.	Junior Year.	Senior Year.
96 69 *Zoölogy* 2 Botany 3 *Math.* *C* *Math.* 1 *Math.* 2 *German* 4^h	75 Phys. Geo. 1 Biology 5 Physics 1^h Philos. 2^b	80 *Geology* 4 Botany 7 Geology 8 *Philos.* 10 Fine Arts 8
97 78 *Greek* 2 *Greek* 5 *Greek* 3 Latin 1 *Latin* 3 German 2	77 Greek 9 Latin 5 Latin 6 French 1	74 Greek 5 *Philos.* 2 *Philos.* 3 Polit. Ec. 1 German 4^c
98[18] 68 French 1 Physics 1^h (Latin 1 (Chem. 1	83 Phys. Geo. 1 Geology 4^d Philos. 1 Spanish 1 German 3 Fine Arts 4^h	68 Zöology 2 Botany 3 *Philos.* 2 *Philos.* 3
99 78 History 13 Polit. Ec. 1 *Greek* 2 *Greek* 5 German 2	75 History 9 Geology 4^d Philos. 1 English 2	68 History 12 Geology 8 Ethics 4 Philos. 6
100 74 Latin 1 French 2 German 2 Chem. 1	70 Latin 6 French 8 *French* 8 Polit. Ec. 1 *History* 2	71 Latin 2 Greek 5 English 2 Zoölogy 2
101 63 Polit. Ec. 1 *History* 2 *Greek* 1^h Latin 1 Chem. 1	73 Polit. Ec. 2 History 11 History 13 Philos. 2^b	86 Polit. Ec. 3 History 9 History 14 History 15
102 61 *History* 2 Latin 1 *Greek* 5 German 1 French 1	81 History 13 Latin 5 Polit Ec. 1 German 4^c	87 History 9 History 12 Polit. Ec. 2 *Philos.* 2 *Philos.* 8
103[19] 71 Fine Arts 7 [Latin 5 German 5 French 3 *History* 2	69 Fine Arts 4^b Polit. Ec. 1 Rom Law 1 Spanish 1	86 Fine Arts 3 Polit. Ec. 3 *Rom. Law* 2 *Geology* 4 Geology 8
104 74 *History* 1^k *Philos.* 1 *Greek* 1^h Latin 1 German 1	68 History 10 Polit. Ec. 1 Zoölogy 2 Geology 4^d	81 History 5 Ethics 4 English 1^a Fine Arts 3
105 74 German 1 French 1 *Latin* 2^h *Greek* 5 *History* 2^k	75 German 4^c *French* 8 Zoölogy 2 Polit. Ec. 1 *History* 2	74 German 6^c Spanish 1 Phys. Geo. 1 Greek 5
106[20] 69 *Latin* 2^h *Greek* 5 Italian 1 *History* 2 French 2	72 Latin 5 Polit Ec. 1 Eng. Comp. 5 History 13	73 Latin 5 Fine Arts 8 Eng. Comp. 5
107[21] 71 *Greek* 5 Latin 1 French 4 *History* 2^k *Music* 1	79 Latin 5 French 4 History 11 Music 3	79 Latin 4 [*Philos.* 2 History 12 Fine Arts 8
108 75 *Greek* 5 Latin 1 *History* 1^k German 1 French 8	64 Latin 6 History 11 Philos. 2^b Polit. Ec. 1	68 Latin 10 History 14 Philos. 9 *Polit. Ec.* 6 *Polit. Ec.* 7
109 68 Chem. 1 *Math.* 2 Greek *B* Latin 1 *Latin* 3	68 Chem. 3 Botany 3 German 3^h French 1	77 Zoölogy 2 Biology 5 Polit. Ec. 1 *Philos.* 3 *History* 2
110 75 German 1 French 1 *Music* 4 *Zoölogy* 2 Chem. 1	65 German 3^h Philos. 1 History 1 Geology 4^d	72 Polit. Ec. 1 *Philos.* 2 History 13 English 2 *English* 8
111 66 *History* 2 *Philos.* 2 *Math.* 1 Physics 1^h German 1	70 History 11 History 13 Polit. Ec. 1 Geology 4^d	83 History 9 History 12 Polit. Ec. 2 Rom Law 1

IN FRESHMAN YEAR: — [18] *German* 3^h; *English* 7^s. — [19] German 5^h. — [20] German 6^h. — [21] French 4.

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
112 73 Biology 5 Chem. 1 French 1 Physics 2	69 Zoölogy 6 Chem. 3 German 1 Philos. 1	76 *Geology* 4 Botany 7 Polit. Ec. 1 English 2 *Elocution* 9	**120** 66 German 2 *German* 3^{h} Chem. 1 *History* 2 French 1	75 German 4^{c} Botany 3 Chem. 3 History 13	86 German 3 German 6^{c} Chem. 4 [Chem. 5 Music 3
113 61 *History* 2^{k} *History* 2 Latin 1 German 1 French 2	71 History 11 History 13 Philos. 2^{b} Polit. Ec. 1	82 History 12 History 14 Philos. 6 Eng.Comp.5	**121** 67 *History* 2^{k} *History* 2 *History* 3 *Greek* 10 *Latin* 4 French 1	67 History 11 History 13 Polit. Ec. 1 Fine Arts 6	77 History 9 History 12 Music 3 Spanish 1
114 73 *History* 1^{k} *History* 2^{k} *History* 2 *Greek* 1^{h} German 1 *Philos.* 2	66 History 9 History 13 Polit. Ec. 1 Geology 4^{d}	71 History 12 *History* 16 Rom. Law 1 *Rom. Law* 2 Fine Arts 3	**122** — French 8 German 2 *German* 4^{h}	67 French 4 *French* 8 German 4^{c} Polit. Ec. 1 History 1 *History* 2	78 French 4 Spanish 1 Polit. Ec. 4 Fine Arts 3 Fine Arts 7
115 59 *Greek* 5 *Greek* 10^{h} *Latin* 2^{h} *Math.* *C* *Math.* 2 *Math.* 3^{m}	72 Greek 7 Greek 8 Greek 9 Latin 6	75 Greek 5 Greek 9 Greek 13 French 1	**123** 58 *Music* 1 (Geology 4^{d} *History* 2^{k} *History* 2 French 1	72 Music 2 Music 3 History 11 History 13 Geology 4^{d}	84 *Music* 4 Music 5 Music 6 History 12 *French* 8
116 63 *History* 2^{k} Spanish 1 *Drawing* 1 *Physics* 1^{h} Geology 4^{d}	69 History 11 Spanish 2 *Drawing* 2 Fine Arts 4^{h} *French* 8	80 History 10 Fine Arts 3 Fine Arts 7 *Philos.* 2 *Philos.* 3	**124** 64 *History* 2 *Greek* 1^{h} Latin 1 French 1 *Music* 1	73 History 13 Polit. Ec. 1 Latin 5 Philos. 2^{b}	75 History 14 Polit. Ec. 2 *Polit. Ec.* 7 Fine Arts 7 *Geology* 4
117[22] 60 Greek 7 Latin 1 French 3 German 2	71 Latin 5 History 13 Phys. Geo. 1 Geology 4^{d}	70 Greek 5 Spanish 1 French 4	**125** 53 *Philos.* 1 (German 1 French 1 Geology 4^{d} *English* 7^{g}	75 Philos. 6 Polit. Ec. 1 History 13 Zoölogy 2 Fine Arts 6	83 Ethics 4 Philos. 9 History 9 Eng.Comp.5
118 53 *Phys. Geo.* 1 Chem. 1 *History* 2 (*Math.* *C* French 1	73 Geology 4^{d} Chem. 2 History 1 Philos. 1 Polit. Ec. 1	72 Geology 8 Geology 18 History 13 *Philos.* 2 *Philos.* 3	**126** 70 Botany 3 German 1 French 1 Chem. 1	69 Biology 5 (German 4^{c} *French* 8 Chem. 3 *History* 2	58 Zoölogy 6 Polit. Ec. 1 Spanish 1 Fine Arts 3 History 1
119 64 *Philos.* 2 *History* 2^{k} *History* 2 German 1 French 2	69 Philos. 5 Philos. 6 Geology 4^{d} Polit. Ec. 1	79 Ethics 4 Philos. 9 Geology 8 Drawing 1	**127** 64 *Philos.* 1 *Drawing* 1 French 1 German 1 Physics 2	63 Philos. 6 Fine Arts 6 *French* 8 Polit. Ec. 1 *History* 2	85 Ethics 4 Fine Arts 7 Math. *C* Math. 7

In Freshman Year: — [22] *Greek* 5; *Greek* 8.

Sophomore Year.	Junior Year.	Senior Year.
128 68 Botany 3 *History* 2 *Philos.* 2 English 1^{a} *Greek* 5	61 Zoölogy 2 Polit. Ec. 1 Philos. 5 Chem. 1	79 Polit. Ec. 2 Polit. Ec. 4 *Philos.* 10 *Ethics* 11 Chem. 3
129 73 *Phys. Geo.* 1 *Zoölogy* 2 Botany 3 Biology 5 *German* 3^{h}	75 Geology 4^{d} Zoölogy 6 Botany 7 Chem. 2	71 Geology 8 Palæont. 14 Physics 2 Drawing 1
130 65 Geology 4^{d} *Math.* 2 *Drawing* 1 Physics 2 *German* 3^{h}	60 Phys. Geo. 1 Math. 1 Fine Arts 4^{h} Chem. 2	65 Zoölogy 2 *Philos.* 2 History 12 Polit. Ec. 1 *Elocution* 9
131 64 *History* 2^{k} *History* 2 Physics 1^{h} Physics 2 *Physics* 3	73 History 13 Zoölogy 2 Biology 5 Polit. Ec. 1	79 Botany 3 *Geology* 4 Botany 7 Polit. Ec. 4 *Polit. Ec.* 6 [French 1
132 63 *History* 2^{k} *Philos.* 1 German 1 French 1 English 1^{a}	75 History 9 Philos. 4 Rom. Law 1 Polit. Ec. 1	78 History 10 History 15 *Rom. Law* 2 *French* 8 Botany 3
133 53 *Zoölogy* 2 Botany 3 Chem. 1 (Fr. German *Physics* 1^{h}	61 Biology 5 [*French* 8 Chem. 3 Fr. German German 1 Philos. 1	76 *Geology* 4 Zoölogy 6 Music 3 *Elocution* 9 Ethics 4
134 67 *Greek* 5 German 1 *German* 4^{h} French 1 Chem. 1	64 Polit. Ec. 1 Music 1 *History* 2 History 3 *English* 7^{g}	73 *Polit. Ec.* 7 Music 2 History 12 *Elocution* 9 English 2
135 74 Chem. 1 Latin 1 German 1 Italian 1	62 Chem. 3 Philos. 1 Polit. Ec. 1 Zoölogy 2	65 Greek 1 History 10 History 12 History 13
136 62 *History* 2^{k} *Philos.* 2 *Phys. Geo.* 1 German 1 Spanish 1	70 History 11 History 13 Geology 4^{d} Polit. Ec. 1	70 History 12 Fine Arts 7 Zoölogy 2 Polit. Ec. 2

Sophomore Year.	Junior Year.	Senior Year.
137 65 *Greek* 1^{h} *Greek* 3 Latin 1 *Latin* 8 German 1 *History* 2	66 Greek 7 Latin 6 Italian 1 Polit. Ec. 1	72 Greek 5 Latin 8 Italian 2 Phys. Geo. 1
138 59 Chem. 1 French 1 German 1 *German* 4^{h} *Philos.* 1	69 Chem. 3 French 3 Polit. Ec. 1 (German 4^{c}	75 Chem. 4 French 5 *Polit. Ec.* 7 Eng. Comp. 5 History 5 Fine Arts 3
139 61 *Physics* 1^{h} *History* 2 (*Math. C* Chem. 1 French 1	77 Physics 2 History 13 Music 1^{n} Music 3 Geology 4^{d}	52 Physics 3 Math. 2 Math. 7 Zoölogy 2
140 54 (*History* 1^{k} *History* 2^{k} *Greek* 5 (English 2 French 3	69 History 3 Fine Arts 6 Latin 5 Polit. Ec. 1 Zoölogy 2 Geology 4^{d}	68 History 12 Fine Arts 7 Greek 5 Spanish 1
141 61 *Greek* 1^{h} Latin 1 *German* 4^{a} *History* 2 French 3 *Fine Arts* 7	62 Latin 5 German 1 Phys. Geo. 1 Music 1^{n}	73 Greek 5 German 3 History 12 Music 3
142 65 German 1 Greek 7 Latin 1 Physics 2	64 German 4^{c} French 1 Polit. Ec. 1 History 1	66 *Geology* 4 *French* 8 Polit. Ec. 2 History 12 History 13
143 63 Phys. Geo. 1 French 1 *Greek* 5 *Music* 1 *History* 2^{k}	63 Geology 4^{d} Fine Arts 5 Latin 5 Polit. Ec. 1	77 Geology 8 Fine Arts 7 Greek 5 Music 3
144[23] 54 *English* 3 *Math.* 2 Chem. 2 Physics 2 [*Geology* 4^{d}	63 English 2 English 4 Chem. 3 Polit. Ec. 1 Zoölogy 2	61 English 1^{a} English 2 *Polit. Ec.* 5 *Polit. Ec.* 7

IN FRESHMAN YEAR: — [23] Chemistry 1; [*English* 7^{g}.

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
145 52 French 8 *Latin* 2^{h} *Latin* 3 (Polit. Ec. 1 Italian 1	52 French 8 Latin 5 *Greek* 10 Polit. Ec. 1 *History* 2 (German 4^{e}	78 *French* 8 *Latin* 7 Latin 10 Fine Arts 3 History 13 *Philos.* 2 *Philos.* 3	**153** 61 Phys. Geo. 1 *Zoölogy* 2 *Physics* 1^{h} Chem. 1 *Music* 1	66 Geology 4^{d} Philos. 1 Physics 2 Polit. Ec. 1	64 Geology 18 *Philos.* 2 *History* 2 Polit. Ec. 4 Music 3
146 57 *History* 2 *Greek* 2 *Greek* 3 Latin 1 *Latin* 3 Polit. Ec. 1	63 History 11 Greek 5 Latin 5 Phys. Geo. 1	60 History 12 Greek 5 Greek 7 *Philos.* 2 *Philos.* 3	**154** 65 *History* 1^{k} *History* 2^{k} German 1 *Greek* 5 English 2	63 History 11 Philos. 1 German 4^{e} Polit. Ec. 1	64 History 12 History 13 Rom. Law 1 Polit. Ec. 4
147 52 French 2 *Philos.* 2 (*Greek* 1^{h} (English 2 *Physics* 1^{h}	57 French 3 Philos. 4 Philos. 5 Zoölogy 2 *Physics* 3 History 1	66 *French* 5 *French* 8 *Philos.* 3 Philos. 6 *Ethics* 11 Polit. Ec. 1	**155** 55 *Greek* 1^{h} *Greek* 3 *Latin* 2^{h} *Latin* 3 Phys. Geo. 1 *History* 2 (*English* 7^{g}	63 Greek 5 *Greek* 5^{h} Greek 7 Polit. Ec. 1 French 1	64 Greek 5 Greek 8 History 13 Zoölogy 2
148 51 Latin 1 German 1 (English 1^{a} French 1	62 Spanish 1 German 4^{e} History 1 Rom. Law 1 Polit. Ec. 1	76 Latin 2 Music 3 *History* 2 *Rom. Law* 2 Phys. Geo. 1	**156** 52 Phys. Geo. 1 Geology 4^{d} Chem. 2 Fine Arts 3	52 History 1 History 11 (Polit. Ec. 1 Philos. 1	70 Geology 8 Geology 18 *History* 2 History 12 *Philos.* 2 Music 3
149[24] — Fine Arts 3 Phys. Geo. 1 Geology 4^{d} History 13	61 Drawing 1 Greek 5 Latin 1 German 1	66 Italian 1 Greek 5 Philos. 1^{b} Polit. Ec. 1	**157** 52 *History* 2^{k} *Greek* 5 *Greek* 10^{h} Chem. 2 (German 1	62 History 11 History 13 Phys. Geo. 1 Geology 4^{d}	66 History 12 Zoölogy 2 Geology 8 Geology 18 Fine Arts 3
150[25] 59 German 2 *History* 2^{k} *History* 2 Music 2 *Greek* 5	52 (German 3^{h} History 13 Philos. 2^{h} Music 3	71 German 3 Polit. Ec. 1 Ethics 4 Fine Arts 7 Chem. 1	**158** 49 *History* 2^{k} (German 1 French 1 *Zöology* 2 *Geology* 4^{d}	69 History 11 German 1 Polit. Ec. 1 Fine Arts 4^{h} Music 1^{n}	64 Philos. 1^{b} Chem. 1 Botany 3 Biology 5
151 62 *History* 2 French 2 French 8 *Drawing* 1 Chem. 1	73 History 11 History 13 Eng. Com. 5 Polit. Ec. 1	62 History 4 History 12 Eng. Com. 5 Spanish 1	**159** 51 Latin 1 *Greek* 5 *History* 2^{k} *Philos.* 1 (German 1	61 Latin 6 Geology 4^{d} History 3 History 11 German 1	64 Latin 5 Zoölogy 2 History 12 Fine Arts 3
152 61 *Greek* 2 *Greek* 5 *Latin* 2^{h} *Latin* 3 English 2 *History* 2^{k}	68 Greek 9 Latin 6 German 1 French 1	60 *Philos.* 2 *Philos.* 3 German 4^{e} French 3 Polit. Ec. 1	**160** 51 *Latin* 2^{h} *History* 2 *Physics* 3 Phys. Geo. 1 French 1	60 Latin 5 History 13 Drawing 1 Geology 4^{d}	64 Latin 2 Greek 5 Fine Arts 3 Spanish 1

IN FRESHMAN YEAR: — [24] A Freshman in 1881–82. — [25] (*English* 7^{g}; *Music* 1.

Sophomore Year.	Junior Year.	Senior Year.
161 55 Latin 1 *History* 2^{k} History 13 Music 3	62 Greek 5 Geology 4^{d} Polit. Ec. 1 Fine Arts 6 *French* 8	56 Latin 2 Geology 8 Geology 18 *Philos.* 2 *Elocution* 9
162 53 Latin 1 German 3 Spanish 1 (History 12	52 (Latin 4 Greek 5 Philos. 2^{b} Chem. 2	65 Latin 4 English 2 Drawing 1 Physics 3 Zoölogy 2 Botany 3
163 54 Fine Arts 3 Chem. 1 (German 1 French 1	65 Fine Arts 4^{h} Chem. 3 History 13 Phys. Geo. 1 Latin 5	59 Drawing 1 Fine Arts 7 History 12 *Philos.* 2 *Philos.* 3
164 56 *Phys. Geo.* 1 *History* 2^{k} *Drawing* 1 English 2 Spanish 1	63 Geology 4^{d} History 11 History 13 English 2	65 Zoölogy 2 History 10 Fine Arts 3 *Elocution* 9 *Philos.* 2
165 59 *Philos.* 1 *Greek* 5 German 1 *Fine Arts* 7 Polit. Ec. 1 Music 3	59 Philos. 4 Philos. 5 Chem. 1 Botany 3	64 Philos. 6 Zoölogy 2 Chem. 3 Fine Arts 3
166 40 Botany 3 Biology 5 German 1 (Chem. 1	60 Zoölogy 6 Philos. 2^{b} German 4^{e} History 10 History 13	71 Zoölogy 2 Philos. 6 Fine Arts 3 History 5
167 74 *History* 2^{k} *History* 2 *Greek* 10^{h} German 1 French 2	68 Fine Arts 6 Polit. Ec. 1 Zoölogy 2 Latin 5	89 Fine Arts 7 History 5 Botany 3 Biology 5
168 54 *Greek* 5 Latin 1 Chem. 1 German 1 *History* 2	69 Latin 5 Latin 6 Geology 4^{d} Philos. 1	63 Greek 5 Polit. Ec. 1 Zoölogy 2 Fine Arts 3

Sophomore Year.	Junior Year.	Senior Year.
169 53 *History* 2^{k} *Drawing* 1 Phys. Geo. 1 *Greek* 5 Spanish 1	59 History 11 Fine Arts 4^{h} Geology 4^{d} Chem. 2	62 History 12 Fine Arts 3 Geology 8 Zoölogy 2
170 45 *History* 2^{k} Spanish 1 French 1 *Greek* 10^{h}	87 History 13 Spanish 2 Geology 4^{d} *Greek* 5 Polit. Ec. 1	55 Zoölogy 2 Geology 8 Geology 18 Fine Arts 3
171 55 *Phys. Geo.* 1 Geology 4^{d} Chem. 2 *Physics* 3 *History* 2^{k}	52 Zoölogy 2 Geology 8 Polit. Ec. 1 Fine Arts 4^{h}	74 Geology 16 Geology 18 *Polit Ec.* 7 *Mec. Draw.* Surveying
172 71 *History* 2^{k} History 9 History 13 Italian 1 *Rom. Law* 2	55 Phys. Geo. 1 Zoölogy 2 Geology 4^{d} Fine Arts 6	55 History 8 History 12 French 1 Spanish 1
173 56 German 1 French 1 Spanish 1 Fine Arts 3	53 Latin 5 History 13 Phys. Geo. 1 Geology 4^{d}	67 Polit. Ec. 1 History 12 Zoölogy 2 Geology 8
174 54 Phys. Geo. 1 French 1 German 1 Physics 2	58 Zoölogy 2 Chem. 1 German 4^{e} History 1	60 Botany 3 Chem. 3 Fine Arts 3 History 12
175 43 Latin 1 *Greek* 5 (*Greek* 10^{h} German 1 *Zoölogy* 2	50 Latin 5 Latin 6 German 4^{e} Geology 4^{d}	68 Latin 2 French 1 Italian 1 Geology 18 Music 3
176 52 *History* 2 Phys. Geo. 1 English 2 (Physics 2	53 History 1 Zoölogy 2 Philos. 1 Polit. Ec. 1 [*Greek* 10	62 History 12 *Philos.* 2 *Philos.* 3 Polit. Ec. 4 *Polit. Ec.* 7 Fine Arts 3
177 58 History 13 Phys. Geo. 1 Geology 4^{d} Fine Arts 3	56 History 11 Latin 1 French 1 Polit. Ec. 1	55 History 10 History 12 French 2 Fine Arts 7

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
178[26] — History 4 (*History* 7^{h} History 9 (Philos. 6 Phys. Geo. 1	51 History 10 (History 11 Rom. Law 1 Polit. Ec. 1	57 History 8 History 12 *Rom. Law* 2 *English* 8 Music 8	**183**[27] 56 Latin 1 *Greek* 5 *Philos.* 1 (*History* 2^{k} German 1	51 Latin 5 Latin 6 Geology 4^{d} History 1 History 8	Greek 5 Spanish 1 Zoölogy 2 Fine Arts 3
179 40 *Phys. Geo.* 1 (Chem. 1 German 1 *History* 2^{h} *History* 2	51 Zoölogy 2 Geology 4^{d} German 4^{c} History 13 Drawing 1	62 Botany 8 Geology 8 Geology 18 Music 8	**184**[27] 63 Chem. 1 Latin 1 German 1 Italian 1	83 Chem. 2 Chem. 3 German 4^{c} Phys. Geo. 1	Chem. 4 Chem. 5 Music 3 Geology 18
180 55 *Greek* 10^{h} Latin 1 French 1 *History* 2^{k} *History* 2	62 Greek 5 Zoölogy 2 Geology 4^{d} Philos. 1	50 Latin 2 Geology 8 Geology 18 Music 8	**185**[27] 87 *History* 1^{k} *History* 2^{k} German 2 French 2 *Math.* 1	93 History 9 History 11 Geology 4^{d} Rom. Law 1	History 12 Zoölogy 2 Geology 8 *Philos.* 2 *Philos.* 3
181 55 *History* 2^{k} *History* 2 German 1 (French 1 English 2	52 History 11 History 13 (German 4^{c} Spanish 1 Geology 4^{d}	55 History 9 History 12 German 4^{c} French 1 Music 8	**186**[27] 76 *History* 1^{k} *History* 2 English 1^{a} German 2 *Latin* 2^{h}	72 History 18 Polit. Ec. 1 English 2 Italian 1	History 9 History 12 Spanish 1 Italian 2
182[27] 51 Phys. Geo. 1 Geology 4^{d} History 18 (Physics 2	56 Zoölogy 2 Geology 8 Fine Arts 4^{h} German 1	— Geology 18 History 12 Fine Arts 8 *Philos.* 2 *Philos.* 3 Spanish 1			

[26] A Freshman in 1881–82. — [27] Nos. 182–186 inclusive did not complete their course.

ELECTIVE STUDIES OF THE CLASS OF 1885.

Sophomore Year. 1882–83.	Junior Year. 1883–84.	Senior Year. 1884–85.
1[1] 97 Math. 2 Math. 3 Physics 2 Physics 4 [Physics 8	95 Math. 5 Math. 6 Math. 8 Italian 1 [Drawing 1	93 Math. 9 Math. 10 Physics 6 Physics 7 [R. Phil. 11 [Italian 2 [Spanish 3
2[2] 93 Greek 9 English 1^a German 2 History 1	95 [Greek 5 English 2 English 4 History 9 History 12	96 English 2 English 3 [Eng. Com. 5 [History 11 History 13 [Polit. Ec. 1 Rom. Law 1
3 93 English 1^a German 2 Philos. 2^b History 1	94 English 2 Polit. Ec. 1 History 9 History 12	94 Rom. Law 1 Polit. Ec. 2 History 13 History 15
4 92 *Latin* 1 German 2 French 1 *History* 2 Chem. 1	94 German 3 Philos. 1^b History 12 Phys. Geo. 1	95 Polit. Ec. 1 Polit. Ec. 4 History 9 History 13
5 92 French 1 Chem. 1 Phys. Geo. 1 Zoölogy 2	93 Philos. 1^b Chem. 3 Botany 3 Biology 5	93 English 2 *Philos.* 3 *Ethics* 11 Polit. Ec. 4 Zoölogy 6
6 93 Philos. 2^b German 2 French 2 Zoölogy 2	94 Ethics 4 Chem. 1 Botany 3 Biology 5	94 *English* 7 Chem. 3 *French* 8 Zoölogy 6 Drawing 1
7 92 Greek 5 Latin 1 Italian 1 History 1	92 Greek 5 Polit. Ec. 1 Italian 2 Chem. 1	95 Greek 1 Polit. Ec. 4 Spanish 1 Phys. Geo. 1
8 90 Greek 2 *Greek* 3 *Latin* 3 Latin 6 Math. 2 [Math. 3	90 Greek 7 Greek 9 Latin 8 Math. 5	93 Greek 8 Greek 11 *Greek* 6 [Greek 9 *Latin* 9 Sanskrit 1
9 90 Greek 2 *Greek* 3 Latin 1 *Latin* 3 German 2	94 Greek 9 *Greek* 5^h Latin 6 *Latin* 7 English 2	95 Greek 8 *Greek* 6 Latin 8 *Latin* 9 Greek 10
10 91 Math. 2 Math. 3 Physics 2 Physics 4	89 Math. 5 Math. 6 Physics 3 French 2	89 Math. 9 [Math. 10 Physics 5 Physics 6 Phys. Geo. 1
11 89 Greek 2 *Greek* 3 Latin 1 *Latin* 3 Philos. 1	90 Greek 7 *Greek* 5^h Latin 6 *Latin* 7 German 3	90 Greek 8 *Greek* 6 Latin 8 *Latin* 9 German 5
12 90 Philos. 1 German 2 Math. *C* Math. 2	90 *Elocution* 9 *Philos.* 3 Ethics 4 Polit. Ec. 1 History 13	91 *Oral Disc.* 6 Philos. 5 Philos. 6 *Philos.* 12 Phys. Geo. 1
13 92 Greek 2 Greek 5 Latin 1 [*Latin* 3 German 2	92 [*Greek* 5^h Greek 7 Greek 8 Latin 4 Latin 5 [*Latin* 7 Comp. Phil. 1	96 Greek 9 Greek 10 Greek 13 [*Greek* 6 [*Latin* 9
14 89 Greek 5 German 2 Math. 2 History 1	93 *English* 8 German 6^c Philos. 1^b Music 1 *Geology* 4	88 Hebrew 1 Ethics 4 Philos. 6 History 10
15 87 German 2 French 2 Philos. 2^b Zoölogy 2	90 English 2 Chem. 1 Ethics 4 Biology 5	94 *English* 7 *French* 8 Chem. 3 Zoölogy 6 Drawing 1
16 87 [English 3 German 2 French 3 [Math. 1 Math. 2 Math. 3	93 Physics 2 Physics 4 Math. 5 Math. 8	87 *Oral Disc.* 6 Physics 6 *Physics* 8 Italian 1 Chem. 1

IN FRESHMAN YEAR:—[1] [*French* 3.—[2] *Greek* 2; *Greek* 3; Latin 1; *Latin* 3.

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
17 89 Greek 2 Latin 1 French 2 History 1	91 Greek 5 Latin 5 French 3 History 9	91 Polit. Ec. 1 Rom. Law 1 History 11 History 13 [History 14	**25** 88 Greek 5 Latin 1 German 2 Math. 2	86 Philos. 1[b] Polit. Ec. 1 German 3 [*History* 2 Chem. 1	85 Philos. 6 Ethics 4 *Ethics* 11 History 13 *Geology* 4
18[3] 90 Greek 5 German 2 French 1 Chem. 1	91 German 3 German 4[c] Zoölogy 2 Chem. 3	86 Phys. Geo. 1 Botany 3 Biology 5 Chem. 2	**26** 87 German 2 French 2 Chem. 2 Geology 4[d]	86 German 4[c] French 3 Polit. Ec. 1 Geology 8	84 History 13 German 5 *Polit. Ec.* 6 *Polit. Ec.* 8 Geology 18
19 91 Greek 2 *Greek* 3 Latin 1 *Latin* 3 Math. 2	83 Greek 8 Chem. 3 Biology 5 Math. 5	82 *Greek* 6 Greek 9 Latin 8 *Latin* 9 Botany 7	**27** 81 Greek 2 Philos. 1 Math. 2 Chem. 1	87 Greek 7 *Philos.* 2 *Philos.* 3 Botany 3 Polit. Ec. 1	85 Greek 5 History 13 Zoölogy 2 Biology 5
20 87 *Latin* 1 *Latin* 3 German 2 Math. 2 Physics 4	91 Math. 3 Math. 5 Math. 6 Physics 2	88 English 2 Polit. Ec. 4 History 13 Rom. Law 1	**28**[4] 89 English 1[a] *Greek* 2 *Greek* 3 *Latin* 1 *Latin* 3 Philos. 2[b]	88 English 2 *Elocution* 9 Fine Arts 3 [Polit. Ec. 1 Ethics 4 [Philos. 6 *Geology* 4	— German 1 German 3
21 91 Greek 2 *Greek* 3 Latin 1 *Latin* 3 German 2	88 Comp. Ph. 1 *Philos.* 2 *Philos.* 3 Polit. Ec. 1 History 1	88 Eng. Comp. 5 Polit. Ec. 2 *Polit. Ec.* 6 *Polit. Ec.* 8 History 13	**29** 80 German 2 *French* 8 *History* 2 Math. 2 Botany 3	84 German 3 Polit. Ec. 1 History 13 Zoölogy 2	88 Spanish 1 French 1 Physics 2 Chem. 1
22 84 French 2 History 4 History 7 Chem. 1	87 French 3 *Elocution* 9 History 9 *Philos.* 2 Polit. Ec. 1	84 Eng. Comp. 5 *English* 7 History 13 Polit. Ec. 2 *Polit. Ec.* 6 [*Polit. Ec.* 8	**30** 87 Greek 2 German 1 Philos. 1 Phys. Geo. 1	86 *Eng. Comp.* 5 German 3 Ethics 4 *Ethics* 11 Zoölogy 2	90 *Oral Disc.* 6 Hebrew 1 *Philos.* 12 Polit. Ec. 4 *History* 2 *Fine Arts* 8
23 84 *Greek* 3 Latin 1 *Latin* 3 French 2 History 1	86 Philos. 1 [*Philos.* 2 Polit. Ec. 1 Polit. Ec. 4 History 12	85 Philos. 6 History 9 History 13 History 15	**31** 82 German 2 *French* 8 *History* 2 Math. 2 Chem. 1	90 German 3 French 3 History 1 Polit. Ec. 1	86 German 5 History 11 History 13 *Polit. Ec.* 8 *Oral Disc.* 6
24 86 *French* 8 French 1 German 2 History 1 *History* 2	84 French 2 German 4[c] History 12 History 13	92 *Elocution* 9 *French* 9 *Latin* 2 Phys. Geo. 1 Zoölogy 2 *Geology* 4	**32** 84 Latin 1 History 1 Chem. 1 Biology 5	88 Greek 5 Polit. Ec. 1 Chem. 3 Zoölogy 6	88 English 2 Polit. Ec. 4 German 2 Phys. Geo. 1

IN FRESHMAN YEAR:—[3] *Greek* 2; *Greek* 3.—[4] Had leave of absence in the Senior year.

Sophomore Year.	Junior Year.	Senior Year.
33 86 Greek 2 French 2 Philos. 1 History 3	82 *Elocution* 9 *Eng. Comp*.5 French 3 Polit. Ec. 1 History 9 [History 4	80 Eng.Comp.5 Rom. Law 1 Polit. Ec. 2 History 13
34 86 German 4^{c} History 13 Polit. Ec. 1 Philos. 2^{b}	91 English 2 *Eng.Comp*.5 History 12 Polit. Ec. 2 *Rom. Law* 2	90 English 2 History 9 History 11 Polit. Ec. 4 Rom. Law 1
35 87 Latin 1 German 1 History 1 Geology 4^{d}	86 Polit. Ec. 1 German 3 History 12 History 13	83 Polit. Ec. 4 *Polit. Ec*. 6 *Polit. Ec*. 8 History 10 History 11
36 85 Greek 5 Latin 1 Philos. 1 Zoölogy 2	80 Polit. Ec. 1 *Philos*. 3 Philos. 5 History 1 *History* 2	84 Eng.Comp.5 Ethics 4 History 11 History 13
37 82 Latin 1 German 2 French 2 History 1	85 Philos. 1^{b} German 3 Polit. Ec. 1 History 9	84 *Oral Disc*. 6 *Ethics* 11 Polit. Ec. 3 Polit. Ec. 4 [*Polit. Ec*. 8 History 13
38 84 *Greek* 2 *Greek* 3 *Latin* 1 *Latin* 3 Latin 4 Music 3 Music 1^{n}	83 Italian 1 Botany 3 History 12 Music 2	89 Italian 2 Zoölogy 2 Music 5 Music 6 [*Philos*. 2
39 84 German 1 Philos. 1 Math. 2 Chem. 1	79 Polit. Ec. 1 *Philos*. 3 History 1 *History* 2 Physics 2	82 Polit. Ec. 3 Polit. Ec. 4 History 13 Rom. Law 1
40 83 *Greek* 2 *Greek* 3 *Latin* 1 *Latin* 3 Math. 2 Chem. 1	86 Greek 1 Philos. 1 Math. 5 Chem. 3	86 History 11 Ethics 4 Botany 3 Biology 5
41 88 German 2 French 1 History 13 Chem. 1	86 German 3 French 3 *Eng.Comp*.5 *Elocution* 9 Philos. 1^{b}	71 German 5 Polit. Ec. 1 Biology 5 Chem. 3
42 86 Greek 5 German 2 [Chem. 1 Phys. Geo. 1 Zoölogy 2	89 Greek 5 German 4^{c} Chem. 3 [Philos. 1^{b} Biology 5	77 *Latin* 2 *History* 2 Zoölogy 6
43 88 Greek 2 *Greek* 3 Latin 1 *Latin* 3 German 1	85 Zoölogy 2 Biology 5 Chem. 1 German 3	76 Greek 1 Greek 5 Latin 2 Spanish 1
44 87 German 1 *French* 8 Polit. Ec. 1 History 1 *History* 2	81 Philos. 1^{b} Polit. Ec. 4 History 9 History 12	75 *Geology* 4 Rom. Law 1 Polit. Ec. 2 *Polit. Ec*. 8 History 13
45 82 French 1 Chem. 1 Zoölogy 2 Biology 5	84 Polit. Ec. 1 Chem. 3 Zoölogy 6 Botany 3	87 English 2 Polit. Ec. 4 *Polit. Ec*. 6 *Polit. Ec*. 8 *Philos*. 2 *Philos*. 3
46 87 Greek 2 Latin 1 [*Latin* 3 German 4^{c} Philos. 1	91 Greek 7 Latin 6 Italian 1 Fine Arts 3	75 Eng.Comp.5 Spanish 1 Polit. Ec. 1 [*Fine Arts* 9 Music 3
47 79 English 1^{a} German 2 French 1 History 13	81 English 2 German 4^{c} Philos. 1^{b} Polit. Ec. 1	83 Eng.Comp.5 English 2 German 5 *Fine Arts* 8 *Fine Arts* 9
48 84 German 2 Chem. 1 Math. 2 Zoölogy 2	84 Physics 1^{h} Chem. 3 Botany 3 Biology 5	73 Chem. 2 Chem. 4 Chem. 5 Zoölogy 6
49 78 Math. 1 Math. 2 Math. 3 Physics 1^{h}	82 Math. 5 Math. 6 Physics 2 Physics 3	85 Math. 9 Math. 10 Physics 5 Physics 7

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
50 77 *Greek* 2 *Greek* 3 *Latin* 1 *Latin* 3 German 1 Math. 2	79 Greek 9 Philos. 1^{b} *Eng.Comp.*5 *History* 2 German 3	84 Greek 8 Philos. 6 Polit. Ec. 1 History 13	**59** 82 *Greek* 2 *Greek* 3 *Latin* 1 *Latin* 8 German 1 French 1	77 Greek 9 Latin 6 Philos. 1^{b} German 4^{c}	75 Greek 9 *History* 2 History 13 German 5 *French* 8
51 77 Greek 2 German 2 Math. 2 Math. 8	82 History 9 History 18 Polit. Ec. 1 Math. 6	82 History 11 History 15 Polit. Ec. 2 Polit. Ec. 8	**60** 83 Phys. Geo. 1 Physics 2 German 1 Chem. 1	78 *Geology* 4 French 1 Polit. Ec. 1 German 3 *History* 2	82 Geology 8 French 2 Polit. Ec. 4 Chem. 3
52 73 German 3 [*French* 8 French 8 History 1 *History* 2 *Rom. Law* 2	88 German 8 German 4^{c} French 2 History 9	81 English 1 English 2 French 4 History 18	**61** 73 *French* 8 History 1 *History* 2 Chem. 1 Phys. Geo. 1	84 Philos. 1^{b} Biology 5 Zoölogy 2 Chem. 8	84 *Philos.* 3 *Philos.* 12 Zoölogy 6 Chem. 4 Polit. Ec. 4
53 72 Greek 2 *Greek* 3 Latin 1 *Latin* 8 History 1	81 Greek 9 Latin 6 German 4^{c} Spanish 1	88 Rom. Law 1 R. Philol. 11 Italian 1 Spanish 8	**62** 81 Greek 2 Greek 5 *Greek* 8 Latin 1 *Latin* 8	79 Greek 5 *History* 2 Polit. Ec. 1 *Geology* 4 Philos. 1^{b}	81 Greek 7 History 1 Polit. Ec. 4 Latin 2
54 82 Greek 5 History 1 German 1 French 2	78 English 2 History 12 German 4^{c} Polit. Ec. 1	87 English 2 History 13 Polit. Ec. 4 *Polit. Ec.* 6 *Polit. Ec.* 8	**63** 66 Greek 2 English 1^{a} German 1 Philos. 1	84 Greek 5 English 2 [*History* 2 History 13 Fine Arts 8	91 Polit. Ec. 4 *Polit. Ec.* 6 *Polit. Ec.* 8 History 11 History 15
55 80 German 1 Math. 2 Chem. 1 Chem. 2	82 German 3 Physics 2 Chem. 8 Chem. 4	77 German 5 *French* 8 Chem. 5 Chem. 6 *Geology* 4	**64** 72 Greek 2 *Greek* 8 Latin 1 *Latin* 3 German 1	78 Greek 1 Greek 5 *Greek* 5^{h} *Latin* 7 Phys. Geo. 1	85 Greek 9 Polit. Ec. 4 Geology 4 Geology 8
56 76 German 1 Philos. 1 History 1 Chem. 1	82 *English* 8 Polit. Ec. 1 Philos. 5 History 9 *Geology* 4	79 *Oral Disc.* 6 Polit. Ec. 2 *Polit. Ec.* 8 History 10 History 13	**65** 60 Greek 2 (*Greek* 3 Latin 6 (*Latin* 3 English 1^{a}	82 Greek 5 *French* 8 History 4 *History* 2 Fine Arts 3	81 Greek 11 Rom. Law 1 Polit. Ec. 4 History 3 English 2
57 79 Greek 5 German 1 Math. *C* Math. 2	72 Greek 5 Polit. Ec. 1 Math. 1 Math. 3	87 Greek 5 English 2 French 1 History 1	**66** 79 *Latin* 1 *Latin* 8 Greek 5 *Greek* 2 *Greek* 8 French 2	81 Eng.Comp. 5 Greek 7 Polit. Ec. 1 *History* 2 *French* 8	79 *Latin* 2 *English* 7 *Polit. Ec.* 6 *Polit. Ec.* 8 History 14 History 15
58 75 German 2 Philos. 1 Italian 1 Botany 3	85 Ethics 4 Philos. 6 Zoölogy 2 Biology 5	88 *Ethics* 11 *Philos.* 12 Botany 7 Polit. Ec. 4 *Polit. Ec.* 6 *Polit. Ec.* 8	**67** 79 Latin 1 French 1 *Rom. Law* 2 Philos. 2^{b} *History* 2	84 Polit. Ec. 1 Polit. Ec. 4 *Eng.Comp.*5 Ethics 4 *Ethics* 11	77 Latin 2 English 2 *Oral Disc.* 6 *Philos.* 12 History 13 *Fine Arts* 9

Sophomore Year.	Junior Year.	Senior Year.
68 73 Biology 5 Zoölogy 2 German 6^c Chem. 1	89 Botany 6 Zoölogy 7 Geology 8 Palaeontol. 14	86 Anatomy 13 Geology 15 Geology 17 Geology 18
69[5] 79 German 2 Latin 1 Philos. 1 Math. 5	76 German 3 French 1 Polit. Ec. 1 Math. 6 [*History* 2	78 German 5 *Polit. Ec.* 6 *Polit. Ec.* 8 Rom. Law 1 History 13
70 75 French 1 *French* 8 Polit. Ec. 1 History 1 *History* 2	86 Polit. Ec. 2 Polit. Ec. 4 *Polit. Ec.* 6 History 9 *Geology* 4	87 Polit. Ec. 3 [*Polit. Ec.* 8 History 13 History 14 History 15
71 80 Greek 2 *Greek* 3 Latin 1 *Latin* 3 Philos. 1	76 *Eng. Comp.* 5 *Elocution* 9 History 13 Polit. Ec. 1 Rom. Law 1	86 Eng. Comp. 5 History 9 History 10 Polit. Ec. 3 *Fine Arts* 9
72 69 Greek 5 German 2 Philos. 1 Math. 2	79 *English* 8 Polit. Ec. 1 Ethics 4 *Geology* 4 History 13	82 Polit. Ec. 4 *Polit. Ec.* 6 *Polit. Ec.* 8 *Ethics* 11 *Philos.* 3 History 9
73 76 Philos. 2^b German 2 French 1 Italian 1	73 Ethics 4 Polit. Ec. 1 History 12 Italian 2	77 *Ethics* 11 Philos. 6 *Philos.* 12 History 10 Spanish 1
74 75 *French* 8 Philos. 2^b German 1 History 1 *History* 2	72 Polit. Ec. 1 History 12 History 13 Zoölogy 2	84 *Oral Disc.* 6 *Philos.* 12 Polit. Ec. 4 *Ethics* 11 History 11 Phys. Geo. 1
75[6] 73 German 5 Philos. 1 History 4 Geology 4^d	75 Fine Arts 3 Polit. Ec. 1 Chem. 1 Geology 8	84 *English* 7 *Fine Arts* 9 Ethics 4 History 13 Palaeontol. 14
76 69 German 2 Music 1^a Chem. 1 Physics 2	82 Philos. 1^b Polit. Ec. 1 Chem. 3 Zoölogy 2	77 Eng. Comp. 12 Polit. Ec. 3 Palaeontol. 14 Biology 5
77 73 Greek 5 German 2 Philos. 1 Geology 4^d	88 *Elocution* 9 History 1 Ethics 4 *Ethics* 11 Zoölogy 2	73 Eng. Comp. 5 History 13 Polit. Ec. 1 Polit. Ec. 4 [*Phil.* 10
78 75 Greek *B* Greek 5 Latin 1 Chem. 1	76 Greek 2 Greek 5 Latin 2 [(*Latin* 3 Chem. 3	73 Greek 5 *Philos.* 2 *Philos.* 3 Chem. 4 Chem. 5
79 74 German 2 French 2 Philos. 1 Chem. 1	68 *English* 8 *Elocution* 9 Philos. 5 Polit. Ec. 1 *History* 2 *Geology* 4	83 *Oral Disc.* 6 *Ethics* 11 Polit. Ec. 4 History 13 Palaeontol. 14
80 77 Greek 5 German 1 French 2 History 1	73 *Philos.* 2 *Philos.* 3 German 4^c English 2 History 12	75 *Geology* 4 *Ethics* 11 Polit. Ec. 4 English 2 *Fine Arts* 8 *Fine Arts* 9
81 72 Greek *B* Latin 1 *History* 2 *Rom. Law* 2 German 1	76 *Elocution* 9 *Philos.* 2 History 13 Polit. Ec. 1 German 3	77 *Oral Disc.* 6 English 2 History 9 Phys. Geo. 1 *Geology* 4
82 66 Music 1 Music 3 French 1 German 1	81 Music 2 Chem. 1 Physics 2 Polit. Ec. 1	80 Music 5 Music 6 Physics 6 *History* 2 *Geology* 4
83 76 German 2 French 2 *French* 8 History 1 *History* 2	64 Polit. Ec. 1 Philos. 1^b History 9 History 12	77 Polit. Ec. 4 *Polit. Ec.* 6 *French* 9 History 13 Music 3
84 71 German 1 French 1 Chem. 2 Geology 4^d	76 German 3 German 4^c Polit. Ec. 1 Zoölogy 2	71 German 5 *French* 8 *Polit. Ec.* 6 *Polit. Ec.* 8 History 13 Drawing 1

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[5] As Special Student in 1881–82 had taken *Mathematics* 2. IN FRESHMAN YEAR: — [6] German 1.

Sophomore Year.	Junior Year.	Senior Year.
85 59 *English* 7^{g} *History* 2 (German 1 French 1 Polit. Ec. 1	80 Drawing 1 History 9 History 12 History 13 Polit. Ec. 4	76 Eng.Comp.12 History 14 Philos. 1 *Polit. Ec.* 6 *Polit. Ec.* 8
86 63 German 1 History 1 History 3 History 4	79 Polit. Ec. 4 History 8 [History 9 History 12 Spanish 1	80 *Polit. Ec.* 6 *Polit. Ec.* 8 History 10 History 14 Music 3
87 64 Greek 2 Latin 1 French 2 Math. 1	68 Greek 7 Latin 6 History 1 Polit. Ec. 1 [*Geology* 4	79 Eng.Comp.5 History 10 Biology 5 Geology 8 [*Geology* 4
88 67 *English* 7^{g} *History* 2 Drawing 1 Math. 1 Geology 4^{d}	74 *English* 8 History 13 *French* 8 Polit. Ec. 1 *Philos.* 2 *Philos.* 3	75 Eng.Comp.12 History 11 *Polit. Ec.* 6 *Polit. Ec.* 8 Philos. 5
89 78 Greek 5 Spanish 1 German 1 History 1	71 Fine Arts 3 Spanish 2 Zoölogy 2 History 12	78 Greek 10 Spanish 3 [Polit. Ec. 4 History 7 History 11
90[7] 62 *English* 7^{g} French 4 *Latin* 3 Fine Arts 4^{h} Geology 4^{d}	81 *English* 8 French 4 Polit. Ec. 1 Fine Arts 3 *History* 2	82 Eng.Comp.12 *Polit. Ec.* 6 *Polit. Ec.* 8 History 13
91 72 Greek 5 History 1 Latin 1 Geology 4^{d}	74 *History* 2 History 12 *French* 8 Polit. Ec. 1 Fine Arts 3	72 Greek 10 History 11 Polit. Ec. 4 *Polit. Ec.* 6 *Polit. Ec.* 8
92 78 Latin 5 German 2 French 1 Philos. 1	69 Polit. Ec. 1 History 10 History 13 Ethics 4	66 Polit. Ec. 4 History 8 History 14 History 15
93 71 Greek 5 *Latin* 1 *History* 2 French 2 German 1	72 *English* 8 History 1 History 13 Polit. Ec. 1 *Geology* 4 [(Physics 2	79 *English* 7 History 11 History 14 *Philos.* 2 *Philos.* 3 *Ethics* 11
94 63 Greek 5 German 1 History 3 Geology 4^{d}	79 Polit. Ec. 1 Polit. Ec. 4 History 1 Fine Arts 3	80 *Polit. Ec.* 6 *Polit. Ec.* 8 *History* 2 History 11 History 13 *Philos.* 2 *Philos.* 3
95 65 Greek 5 History 1 Math. 2 Chem. 1	67 Polit. Ec. 1 *History* 2 Math. 1 Chem. 3 *Mec. Draw.*	84 Biology 5 [*Geology* 4 Geology 8 Geology 16 Geology 18
96 70 History 1 History 3 Physics 2 Geology 4^{d}	74 *History* 2 *Philos.* 2 Polit. Ec. 1 Geology 8 Fine Arts 3	80 History 11 Greek 10 Palaeontol.14 Geology 18
97 47 German 1 French 1 History 1 (Math. 2	80 German 4^{e} Spanish 1 Polit. Ec. 1 Zoölogy 2 Biology 5	73 Philos. 1 Spanish 2 *History* 2 Botany 3 *Geology* 4
98 62 Latin 1 German 1 History 1 Chem. 1	78 Polit. Ec. 1 Fine Arts 3 History 12 Chem. 3	74 Polit. Ec. 4 Zoölogy 2 [History 8 History 13 *Philos.* 2 *Philos.* 3
99 72 Latin 1 German 1 French 1 History 1	65 Polit. Ec. 1 Polit. Ec. 4 *French* 8 *History* 2 Philos. 1^{b}	70 English 2 Music 3 History 11 History 13
100 56 Latin 1 German 1 Math. 1 Chem. 1	78 History 1 Phys. Geo. 1 Zoölogy 2 Chem. 3	80 *Philos.* 2 *History* 2 Botany 3 Biology 5 Chem. 4
101 62 Greek 5 Latin 1 Phys. Geo. 1 Geology 4^{d}	76 Polit. Ec. 1 Spanish 1 History 12 Zoölogy 2	78 Greek 10 Spanish 2 *French* 8 *French* 9 Music 3
102 61 Latin 1 German 1 Philos. 2^{b} Phys. Geo. 1	78 Polit. Ec. 1 History 13 Rom. Law 1 Zoölogy 2	82 Polit. Ec. 4 History 8 History 9 Geology 8

IN FRESHMAN YEAR:—[7] French 4.

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
103 74 Greek 5 Latin 1 German 1 French 2	71 Polit. Ec. 1 Spanish 1 German 4^{e} French 4	67 Greek 10 Spanish 2 German 3 *French* 9 Music 3	**112** 74 Greek *B* Greek 5 German 1 Chem. 1	67 Greek 1 Greek 5 Spanish 1 *History* 2 [(History 12 *Geology* 4	58 Greek 5 Greek 10 (Greek 9 *Fine Arts* 8 Music 3
104 77 Greek 2 Greek 5 *Greek* 3 Latin 1 *Latin* 3	68 Greek 5 Greek 7 (Arabic 7 Latin 2	56 Greek 8 Greek 9 Greek 10 Latin 5 Latin 6	**113** 63 German 2 German 5 *French* 8 History 1 *History* 2	68 German 6^{c} English 2 French 1 Philos. 1^{b}	78 German 7 Eng.Comp.12 Spanish 1 Polit. Ec. 4
105 55 (German 2 Chem. 1 Philos. 1 Zoölogy 2	70 German 1 Chem. 3 Botany 3 Biology 5	73 *History* 2 French 1 *French* 8 Phys. Geo. 1 Zoölogy 6 Geology 4	**114** 61 (German 1 French 1 Spanish 1 History 1	66 English 2 German 1 French 2 Spanish 2 Italian 1	75 English 2 Eng.Comp.12 Polit. Ec. 4 Music 3
106 67 Latin 1 German 1 Philos. 1 History 1	71 Polit. Ec. 1 German 3 Ethics 4 History 13	76 *Oral Disc.* 6 German 7 *Ethics* 11 Philos. 6 *Philos.* 3 *Philos.* 12	**115** 67 German 1 French 1 Physics 2 Chem. 1	62 German 4^{e} *English* 8 Music 1 Math. 2 *Mec. Draw.*	74 Polit. Ec. 1 Music 3 Geology 4 Surveying
107 65 Philos. 1 Fine Arts 4^{h} Physics 2 Geology 4^{d}	66 Polit. Ec. 1 Fine Arts 3 Physics 3 Geology 8	74 Polit. Ec. 4 Drawing 1 Eng.Comp.12 Palaeontol.14	**116** 53 Greek 5 Latin 1 (German 1 Physics 1^{h}	63 Greek 5 Latin 2 (German 1 Music 3 Zoölogy 2	83 Greek 1 Greek 5 Greek 10 Chem. 2 Phys. Geo. 1
108 75 Greek 3 *French* 8 *History* 2 Phys. Geo. 1 Zoölogy 2	53 Spanish 1 Polit. Ec. 1 (History 13 Fine Arts 3 *Geology* 4	73 Greek 10 Polit. Ec. 4 History 5 Music 3 Botany 3	**117**[*] 61 German 1 French 1 Philos. 2^{b} Drawing 1	65 [Latin 2 English 2 *History* 2 Polit. Ec. 1 Fine Arts 3 *Geology* 4 [Botany 3	67 English 2 Italian 1 Polit. Ec. 4 Music 3
109 65 History 1 History 3 Philos. 2^{b} Phys. Geo. 1	63 *Elocution* 9 History 13 Polit. Ec. 1 *Geology* 4 Zoölogy 2	74 *Oral Disc.* 6 History 9 History 14 *Philos.* 12 Rom. Law 1	**118** 73 Phys. Geo. 1 Zoölogy 2 Botany 3 Biology 5	72 Palaeontol. 14 Zoölogy 6 Chem. 1 History 1	66 Geology 8 French 2 Chem. 3 Polit. Ec. 4
110 55 German 1 French 1 Physics 2 Geology 4^{d}	71 *English* 8 Latin 2 *History* 2 Geology 8 Zoölogy 2	81 *English* 7 *Fine Arts* 8 History 11 Geology 18 Palaeontol.14	**119** 52 English 2 (German 1 Physics 2 Geology 4^{d}	59 Latin 2 *English* 8 History 1 *History* 2 Polit. Ec. 1 Geology 8	66 *English* 7 Eng.Comp.12 History 13 *Polit. Ec.* 8 Palaeontol.14
111 63 Greek 5 German 1 Philos. 2^{b} Phys. Geo. 1	69 Polit. Ec. 4 History 12 Fine Arts 3 Fine Arts 7	71 Greek 10 Music 3 Philos. 6 Chem. 2	**120** 56 (English 2 German 1 Physics 2 Geology 4^{d}	78 *History* 2 Philos. 1^{b} *Philos.* 3 Polit. Ec. 1 Polit. Ec. 4 Geology 8	61 History 11 History 13 Polit. Ec. 2 *Polit. Ec.* 6 *Polit. Ec.* 8 Palaeontol.14

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[*] Had leave of absence during the Senior year.

Sophomore Year.	Junior Year.	Senior Year.
121 48 French 1 History 1 *History* 2 (Latin 1 (*Latin* 3	57 Philos. 1^b History 9 History 12 Math. *C* Chem. 1	81 Zoölogy 2 Botany 3 Biology 5 Math. 3 Chem. 3
122[9] 65 English 1^a *English* 7^g History 1 *History* 2 Physics 2	62 English 2 *English* 8 History 12 *Philos.* 2 Polit. Ec. 1	71 *English* 2 Eng. Comp. 5 *Oral Disc.* 6 *Elocution* 9 Polit. Ec. 4
123[10] 57 French 1 Drawing 1 Physics 2 Chem. 1	68 English 2 Philos. 1^b *History* 2 Math. 2	63 German 1 Philos. 4 Polit. Ec. 1 Math. 5
124 55 German 2 *French* 8 Philos. 2^b History 1 *History* 2	56 English 2 Polit. Ec. 1 Fine Arts 3 History 12	78 Music 3 Polit. Ec. 4 *Fine Arts* 9 Chem. 2 *Geology* 4
125 66 French 1 Philos. 2^b History 1 Math. 2	63 *Elocution* 9 *French* 8 Ethics 4 History 13 Polit. Ec. 1	64 Eng. Comp. 12 *French* 9 *Philos.* 10 History 9 Polit. Ec. 4
126 62 Greek 5 Drawing 1 (History 4 Geology 4^d	66 Latin 2 Fine Arts 3 Phys. Geo. 1 Zoölogy 2	67 Eng. Comp. 12 Spanish 1 History 11 History 13 Music 3
127 58 (Latin 1 French 3 Polit. Ec. 1 History 1	70 German 1 French 4 Spanish 1 *Philos.* 2 *Philos.* 3 Botany 3	66 *French* 8 Spanish 2 *History* 2 Philos. 5 Geology 4
128 68 Polit. Ec. 1 History 3 History 13 Geology 4^d	67 Polit. Ec. 4 Chem. 1 Zoölogy 2 Geology 8	65 *English* 7 *Oral Disc.* 6 Eng. Comp. 12 Spanish 1 Palaeontol. 14
129 57 Greek 5 Greek 7 German 1 Zoölogy 2	54 *English* 8 Greek 2 Spanish 1 Botany 3 *History* 2	78 Greek 5 Greek 8 Greek 9 German 3 [History 13

Sophomore Year.	Junior Year.	Senior Year.
130 42 (Greek 5 German 1 Chem. 1 Zoölogy 2	66 Greek 5 German 4^e French 1 (Polit. Ec. 1 Music 1	71 Greek 10 *History* 2 (French 2 Polit. Ec. 4 Music 2 Botany 3
131 65 German 1 French 1 History 1 Philos. 1	63 (*Elocution* 9 (Polit. Ec. 1 Fine Arts 3 *Philos.* 3 Ethics 4	60 *Elocution* 9 Italian 1 *Fine Arts* 9 Philos. 6 *Ethics* 11 *Philos.* 12 English 2 (English 1
132 68 *Greek* 3 *History* 2 Drawing 1 Physics 2 Math. 1	63 Spanish 1 Zoölogy 2 Fine Arts 3 Physics 3	63 Italian 1 Geology 4 Music 3 Polit. Ec. 4
133 54 Greek 5 German 1 History 1 History 3	66 Spanish 1 Polit. Ec. 4 History 12 Fine Arts 3	72 Greek 10 Polit. Ec. 1 History 11 Music 3
134 43 (Greek 5 (Latin 5 History 1 Chem. 1	70 Polit. Ec. 1 French 1 *History* 2 Fine Arts 1 Zoölogy 2 *Geology* 4	69 Polit. Ec. 4 History 7 History 11 *Fine Arts* 9 Phys. Geo. 1 Geology 8
135 50 Greek 5 Latin 1 German 1 (History 1	66 English 2 Latin 2 *Geology* 4 *History* 2 Polit. Ec. 1 Fine Arts 3	65 Eng. Comp. 12 Music 3 Geology 8 Geology 13
136 64 Greek 5 Latin 5 History 1 Geology 4^d	53 Fine Arts 3 History 12 History 13 Geology 8	68 Greek 10 Music 3 Zoölogy 2 Palaeontol. 14 Geology 13
137 59 Greek 5 *French* 8 Philos. 2^b History 1 *History* 2	57 Spanish 1 Polit. Ec. 1 Fine Arts 3 History 12	69 Eng. Comp. 12 Polit. Ec. 4 *Fine Arts* 9 History 8 Music 3

Allowed to take English 2 as a half-course. IN FRESHMAN YEAR:—[10] *Fine Arts* 7; *Zoölogy* 2.

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
138 40 Greek 5 German 1 History 1 (Physics 2	67 *Philos.* 2 *Philos.* 3 History 12 Polit. Ec. Fine Arts 3 Zoölogy 2	68 Eng.Comp.12 Philos. 5 History 1 *Polit. Ec.* 6 *Polit. Ec.* 8	**147** 52 German 1 French 1 Philos. 2^b Zoölogy 2	53 Italian 1 (Polit. Ec. 1 Philos. 6 *Geology* 4 *History* 2	65 Greek 10 Polit. Ec. 4 Botany 3 Geology 8 Palaeontol.14
139 56 Philos. 1 History1 Phys. Geo. 1 Geology 4^d	62 *English* 8 *History* 2 Spanish 1 Zoölogy 2 Fine Arts 3	71 Polit. Ec. 4 History 11 Music 3 Botany 3	**148** 53 Latin 1 (German 1 History 1 Geology 4^d	69 Latin 2 English 2 *Elocution* 9 Zoölogy 2 *Philos.* 3 Polit. Ec. 1	48 Latin 6 English 2 History 13 Phys. Geo. 1
140 55 German 2 French 2 (History 4 History 13	47 (Polit. Ec. 1 Polit. Ec. 4 History 9 History 12	74 *Elocution* 9 Eng.Comp.12 Polit. Ec. 1 History 11 Music 3 Philos. 1 *Ethics* 11	**149** 63 German 1 Physics 1^h Chem. 1 Zoölogy	60 English 1 Philos. 1^b Botany 3 Biology 5	51 (Polit. Ec. 1 *Philos.* 3 *History* 2 Music 1 Music 3
141 66 *English* 7^s French 1 History 1 *History* 2 Geology 4^d	60 *English* 8 *French* 8 History 12 History 13 Polit. Ec. 1	54 Eng.Comp.12 Spanish 1 History 11 Phys. Geo. 1	**150** 54 Greek 5 Latin 1 Philos. 1 Geology 4	59 *History* 2 Latin 2 *Philos.* 2 Polit. Ec. 1 Zoölogy 2	59 History 1 History 11 *Ethics* 11 Polit. Ec. 4 *Polit. Ec.* 8
142 58 Greek 5 Spanish 1 History 3 Geology 4^d	66 Fine Arts 3 Spanish 2 History 1 Zoölogy 2	66 Greek 10 Polit. Ec. 4 History 11 Music 3	**151** 54 Greek 5 German 1 Phys. Geo. 1 Geology 4^d	54 *Philos.* 2 (Spanish 1 Zoölogy 2 History 13 *History* 2	63 Greek 10 Spanish 1 Music 3 History 1 History 11
143 59 German 1 French 1 History 1 Geology 4^d	62 *English* 8 German 3 Fine Arts 3 *History* 2 Polit. Ec. 1	65 Eng.Comp.12 *Ethics* 11 *French* 8 History 1 Polit. Ec. 4	**152** 48 German 1 *French* 8 *History* 2 (Phys. Geo. 1 Zoölogy 2	58 Greek 5 Spanish 1 History 13 Polit. Ec. 1 Music 3	58 Philos. 1 Italian 1 Polit. Ec. 4 Drawing 1 [*Geology* 4
144 55 Latin 5 German 1 History 3 Geology 4^d	66 Music 3 German 3 History 1 History 12	63 Greek 10 Polit. Ec. 4 Polit. Ec. 1 Drawing 1 Geology 18	**153** 46 (German 1 History 1 Phys. Geo. 1 Geology 4^d	65 *Philos.* 2 *History* 2 History 12 Zoölogy 2 Geology 8 Fine Arts 3	62 Greek 10 History 11 Polit. Ec. 1 (Polit. Ec. 4 Music 3
145 57 German 1 French 2 *French* 8 History 1 *History* 2	60 German 4^c Polit. Ec. 4 Music 3 History 12	64 English 2 *English* 7 History 10 History 11 [History 13 *Geology* 4	**154** 50 German 1 Spanish 1 History 1 Drawing 1	59 *French* 8 Spanish 2 *History* 2 (History 12 Fine Arts 3	53 *French* 9 (English 2 Eng.Comp.12 Italian 1 Polit. Ec. 4 Phys. Geo. 1
146 55 German 1 French 1 Spanish 1 Geology 4^d	62 Latin 2 Italian 1 Spanish 2 Fine Arts 3	62 Eng.Comp.12 Italian 2 Polit. Ec. 4 Music 3 *History* 2	**155** 45 German 1 *French* 8 *History* 2 Polit. Ec. 1 (Geology 4^d	53 Fine Arts 3 History 1 History 12 Polit. Ec. 4 *Geology* 4	65 Eng.Comp.12 French 1 *French* 9 History 11 Music 3

Sophomore Year.	Junior Year.	Senior Year.	Sophomore Year.	Junior Year.	Senior Year.
156 56 History 1 Drawing 1 Zoölogy 2 Geology 4^{d}	48 Latin 2 *History* 2 Fine Arts 3 *English* 8 Polit. Ec. 1	55 History 11 Music 3 Eng. Comp. 12 Polit. Ec. 4	**161**[11, 12] 76 English 1^{a} *English* 7^{g} *Philos.* 1 German 1 *Greek* 1^{h} *Greek* 10	86 English 2 Eng. Comp. 5 Ethics 4 Polit. Ec. 1	91 *English* 6 Eng. Comp. 5 *Elocution* 9 Polit. Ec. 3 Polit. Ec. 4
157 45 German 1 Geology 4^{d} (History 1 Fine Arts 4^{h}	54 Greek 5 Latin 2 Spanish 1 History 1 Fine Arts 3	60 Eng Comp. 12 Italian 1 Polit. Ec. 4 Music 3	**162**[11] 85 Greek 2 *Greek* 3 Latin 1 *Latin* 3 Polit. Ec. 1	85 Phys. Geo. 1 Zoölogy 2 Botany 3 [*Geology* 4 Biology 5	85 Nat. Hist. 11 Zoölogy 6 Botany 7 Palaeontol. 14
158[11] 91 *Philos.* 1 *Physics* 1^{h} *Physics* 3 French 1 German 2	93 Ethics 4 Philos. 5 Polit. Ec. 1 History 4	90 Ethics 4 *Philos.* 10 *Ethics* 11 Eng. Comp. 5 *English* 6 *Elocution* 9	**163**[11] 56 (Zoölogy 2 Philos. 2^{b} *History* 2 *Rom. Law* 2 Math. 1	55 Zoölogy 2 Polit. Ec. 1 Polit. Ec. 4 (*Polit. Ec.* 5 *Polit. Ec.* 7	54 Phys. Geo. 1 Geology 4 (Polit. Ec. 3 Spanish 1 Math. 2 *English* 6
159[11] 78 French 1 German 1 History 1 Math. 2	80 *French* 8 *History* 2 History 12 Polit. Ec. 1 Philos. 1	— French 8 English 2 Zoölogy 2 Polit. Ec. 4.	**164**[11, 13] 65 Chemistry 1 Zoölogy 2 English 2 German 4^{c}	74 Chemistry 8 *History* 2 *English* 8 Polit. Ec. 1 Italian 2	— History 11 History 13 *French* 8 *Philos.* 2 *Philos.* 3 *Ethics* 11
160[11] 89 Greek 2 *Greek* 3 Latin 1 *Latin* 3 History 1 [Math. 2	87 Greek 5 English 1^{a} Philos. 1 Physics 2 [*History* 2	— Greek 7 English 2 Chem. 1 History 11			

[11] Nos. 158–164 were not ranked in the class. No. 158 was a Sophomore in '79–'80 and a Junior in '80–'81. — [12] A Sophomore in '81–'82; and a Junior in '82–'83. — IN FRESHMAN YEAR: — [13] German 1.

These three hundred and fifty choices of studies, each of which covered three years, suggest many different reflections and lines of inquiry and discussion. It is proposed to discuss them here under six separate heads: 1. The degree of specialization in study which liberty of choice has produced. 2. The wisdom of the choices as regards continuity of study or persistency in the same or kindred studies from year to year. 3. The supposed prevalence of a disposition to choose easy subjects. 4. The expediency of limiting choice by prescribing groups of cognate studies. 5. The effect of diversity of studies upon the intellectual life of the College. 6. The meaning of the Bachelor's degree.

1. It is a principal advantage of the elective system that it

permits the student to concentrate his work upon the subjects in which his capacity is greatest, and so to be thorough in a chosen line of study. This freedom for the student to specialize has the incidental advantage of effectively developing the advanced instruction of the College, for zealous teachers are always ready to lead ambitious students on. Now, the freedom which has these great uses might conceivably admit a serious abuse, — namely, a specialization so extreme as to impair that general cultivation and openness of mind which may reasonably be expected in educated men. It is therefore an interesting inquiry, is specialization extreme or too common in the above recorded 350 cases?

The following table gives by number all the cases of specialization of studies sufficient, or more than sufficient in quantity to qualify the student as a candidate for "Honors" at graduation in one or more of the several departments in which Honors are given. (For the qualifications required for Honors in these subjects respectively see Appendix, p. 185. A few elementary courses in languages, philosophy and history cannot be counted for Honors. See the annual list of courses of instruction.) In general it may be said that the student who seeks Honors must devote about half his time during three years to studies within the department in which he seeks them; but this restriction to studies within the chosen department is by no means absolute, as will be seen in the regulations just referred to. In the Class of 1884, fifty out of the sixty-eight persons who specialized their work enough, or more than enough, for Honors, devoted not more than $\frac{7}{12}$ of their time for three years (excluding the little time given to prescribed subjects) to studies within a single department, or counting for Honors in that department; and only fifteen devoted $\frac{5}{8}$ or more of their time for three years to the subjects of a single department, or to cognate subjects in closely related departments. These last fifteen cases are nos. 2, 4, 5, 8, 9, 11, 28, 31, 32, 34, 36, 48, 85, 115, and 129, and among these cases nos. 31, 32, 34, and 48 are cases of extreme concentration of work, three of the four being in Classics and one in mathematics and physics. In the Class of 1885 there were only thirty cases in which study was specialized even to the moderate degree required for Honors; and eighteen out of these thirty persons gave not more than $\frac{7}{12}$ of their time for three years to studies which could be counted for Honors in a single department. The other twelve persons — namely, nos. 1, 8, 9, 10, 11, 13, 49, 68, 70, 86, 104, and 162 — gave $\frac{2}{3}$ or more of their time to one subject or to closely related subjects; and eight of these twelve cases are cases of extreme concentration of work, — namely, nos. 1, 8, 9, 10, 13, 49, 68, and 104 — four of the eight being in Classics, three in mathematics and physics, and one in natural history.

ALL THE CASES (IN THE PRECEDING TABLE) OF SPECIALIZATION OF STUDIES SUFFICIENT, OR MORE THAN SUFFICIENT IN QUANTITY, TO QUALIFY FOR "HONORS."

1884.

No.
1. Philosophy.
2. Semitic Lang.
3. Classics.
4. Nat. History.
5. Nat. History.
8. Classics.
9. Polit. Science.
10. Chemistry.
11. Nat. History.
12. Classics.
14. Classics.
15. Polit. Science.
17. Chemistry.
18. Pol. Sci. & Hist.
19. Nat. History.
20. Polit. Science.
21. Pol. Sci. & Hist.
23. Classics.
24. Mathematics.
26. Philosophy.
27. Chemistry.
28. Classics.
31. Phys. & Math.
32. Classics.
33. Polit. Science.
34. Classics.
36. Pol. Sci. & Hist.
37. History.
39. Polit. Science.
40. Nat. History.
42. Polit. Science.
45. Pol. Sci. & Hist.
48. Classics.
52. Nat. History.
53. Chemistry.
55. Music.
58. Polit. Science.
59. Mathematics.
60. Nat. History.
62. Polit. Science.
63. Chemistry.
66. Chemistry.
67. Classics.
69. Nat. History.
70. Classics.
72. Pol. Sci. & Hist.
81. Nat. History.
83. Physics.
85. History.
87. Chemistry.
88. Nat. History.
96. Nat. History.
97. Classics.
101. Pol. Sci. & Hist.
111. Pol. Sci. & Hist.
114. History.
115. Classics.
121. History.
123. Music.
129. Nat. History.
137. Classics.
146. Classics.
154. Polit. Science.
155. Classics.
171. Nat. History.
178. History.
179. Nat. History.
184. Chemistry.

1885.

No.
1. Phys. & Math.
2. English.
3. Pol. Sci. & Hist.
8. Classics.
9. Classics.
10. Phys. & Math.
11. Classics.
13. Classics.
19. Classics.
34. Pol. Sci. & Hist.
48. Chemistry.
49. Mathematics.
55. Chemistry.
62. Classics.
64. Classics.
68. Nat. History.
70. Polit. Science.
78. Classics.
82. Music.
86. History.
92. History.
104. Classics.
105. Nat. History.
109. History.
112. Classics.
116. Classics.
118. Nat. History.
129. Classics.
145. History.
162. Nat. History.

CLASSIFICATION OF THE ABOVE CASES OF SPECIALIZATION.

		Honors awarded.‡
In 1884	68 cases out of 186	34
In 1885	30 " " 164	12

DIVISION OF THESE CASES BY DEPARTMENTS.

	1884.	1885.	Honors awarded. 1884.	Honors awarded. 1885.
Classics	16	12	10	4
Political Science*	16	3	6	..
Natural History	14	4	4	1
History	5	4	3	2
Chemistry	8	2	3	..
Physics†	2	2	1	2
Mathematics	2	1	2	1
Music	2	1	2	1
Philosophy	2	0	2	..
Semitic	1	0	1	..
English	0	1	0	1
	68	30	34	12

Among the whole 350 recorded cases it appears that there are only twenty-seven cases (less than eight per cent) of highly specialized work (at least $\frac{2}{3}$ of three years in the same subject), and that of these twenty-seven only twelve are cases of extreme concentration. One would have supposed that more than one student in thirteen would have found it expedient to specialize his work to a high degree during the last three years of the College course. It is one important function of a university to produce educated specialists; and all experience shows that young men of remarkable capacity in a single direction wish and need to concentrate their work by the time they are twenty years old, and often before that age. On the other hand, it clearly appears that ninety-two per cent of the 350 students whose choice of studies is recorded in the above tables did not use their freedom in order to specialize their work to any degree which could seem inexpedient even to persons who doubt the wisdom of specialization. The instructors who have charge of advanced courses all complain that the number of students in such courses is unduly small; and the same fact appears conspicuously in the figures which accompany the lists of courses of instruction in the Dean's annual reports. These are indeed courses which cannot be given at all except under a wide elective system; but they are the very courses which characterize a university, and make it serviceable to capable and vigorous students. The ordinary college student does not wish to specialize much; and the opportunities offered to specialists at the University, being of recent creation, are not yet widely enough known to draw to Cambridge in considerable numbers those graduates of other institutions, or those advanced students from other parts of the country, who have the wish and the capacity for specialized study. The liberty to specialize is as yet barely used. Certainly it is not abused.*

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* Including 9 in History not given under "History."

† Including 3 in Mathematics not given under "Mathematics," one of whom took Honors in Physics and Mathematics, and is therefore counted twice in the table of "Honors awarded."

‡ Honors were awarded to two students in 1884, and five students in 1855 who were graduates of other institutions, or of Harvard previous to 1884, and the work of these students is not counted in this table, as it does not enter into the table "Choice of Studies," etc.

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* The regulations concerning Honors may seem to some persons too technical or artificial to afford a satisfactory criterion of specialization of study, certain courses of study being excluded from the Honor groups for reasons which are not always obvious. A variety of tests of specialization can easily be applied to the table of choices. For example, if a student pursued six full elective courses, counting both the elementary and the advanced, in the same department of study, — Latin and Greek being treated as separate departments, — most persons would say that he had specialized his work, six full courses representing half the elective work of the student during his Sophomore, Junior, and Senior years. The table gives fifty cases of this sort, divided among the departments as follows: —

	1884.	1885.
Greek	5	5
Semitic	1	
English		1
Philosophy	1	
History	7	1
Mathematics	3	3
Physics	1	
Chemistry	4	1
Natural History	13	4
Total,	35	15

Every one of these cases is included in the table on page 32. In applying any such test, it should be remembered that the department called Natural History is really a group of studies comprising physical geography and meteorology, botany, zoölogy, and geology.

A test which no two persons would apply in the same way, — its results depending upon individual judgment, — is, of course, not available for statistical purposes.

2. The inquiry whether students free to choose their studies exhibit generally in their choices some intelligible plan, and a reasonable degree of persistency, is one of the most interesting inquiries connected with the working of an elective system. If the free choice of studies frequently resulted in a capricious selection for trivial motives of heterogeneous, disconnected elementary studies, that one fact would be, in itself, a serious objection to an unrestricted application of the principle of election. A careful inspection of the table of 350 choices will satisfy any candid mind that the elective system produces no such evil, but on the contrary results in consistent plans of individual study throughout the College course. Inconsecutive or aimless selections are hard to find in that table. It is not probable that any two persons would perfectly agree in the selection of the cases of incoherent or motiveless choice; for opinions differ considerably as to what constitutes reasonable coherency. Two experts, both familiar with the courses of instruction during the period 1881–1885, carefully examined the entire series of 350 choices, independently of each other, to pick out those which in their judgment lacked coherency or consecutiveness. One selected sixteen cases and the other twenty, but the two agreed only upon seven — namely, 1884, nos. 76, 149, and 162; 1885, nos. 29, 111, 126, and 132. A third expert was then called in to make an independent search, with the result that two of the three experts (not the same two in every case) agreed in considering the following numbers deficient in coherency of plan — 1884, nos. 74, 76, 82, 117, 130, 135, 149, 158, 161, 162; 1885, nos. 20, 29, 46, 60, 101, 111, 115, 126, 132, 149, 157, being twenty-one cases in all; but the three agreed only upon six cases — namely, 1884, nos. 76, 149, and 162; 1885, nos. 29, 111, and 126. When experts cannot agree that a given selection of studies lacks coherency, it may well be that knowledge of the circumstances and conditions under which the individual selection was made would explain or justify it. To make a plan of studies for a young man, or to criticise fairly a plan which he has made for himself, requires a very thorough knowledge of his tastes, capacities, inheritances, circumstances, and purposes. The general result is that incoherent choices are very few, and that the

intelligence in selection is nearly as great in the lower half of a class as in the upper half.

There must exist, therefore, some guiding principles or demarcations, natural or artificial, which avail to make free choice judicious in the main, and particularly to make it coherent. A just appreciation of these determining principles, or natural limits, goes far to interpret the working, and account for the success of the elective system. The purely natural guides for the student making his plan of studies are, indeed, so obvious and authoritative that the most thoughtless youth can hardly help seeing and following them. In the first place he cannot help taking up a new subject at the beginning and not at the middle. Secondly, if he would continue a study which he has already pursued, he must take it up again from the point where he left it off. Thirdly, he finds that many subjects taught at a university involve other subjects not in the same department, and cannot be advantageously studied without a previous knowledge of those other subjects. Fourthly, he perceives that every advanced course presupposes acquaintance with some elementary course or courses in the same department. Lastly, he recognizes and obeys the general tendency to pursue a congenial subject of study once entered upon. So effective are these natural safeguards against fickleness and inconsecutiveness in the choice of studies, that it seems chiefly necessary that the student should be informed about the inevitable sequence of studies in each department, and the mutual dependence of related departments. This information the Faculty undertakes to give. The departments of Sanskrit, Classics, mathematics, history, political economy, French, music, botany, and physical geography, geology, and palaeontology issue each a printed description of all its courses of instruction, setting forth the nature and subject-matter of each course, the method of instruction, the sequence of the courses, and the special preparation, if any, needed for each course, preparation either within or without the department. The absence of these descriptions in several important departments points to one of the present defects of the College — namely, inadequate organization in some of the principal departments of instruction. The list of courses of instruction for the ensuing year, which is published every spring, contains many explanations and injunctions concerning the proper order of studies and the preparation needed for particular courses.* These directions undergo some modification from year to year, in consequence of changes in the courses themselves or in the mutual relations of different courses, or in the demands of the students; and their number might be considerably increased, if need appeared. With regard to about one quarter part of all the courses of instruction, it is stated in the list that they cannot be chosen without the previous consent of the instructor, which is made contingent upon adequacy of preparation. These courses are generally starred (*). In addition to all official announcements, the eighty teachers of the College give a great deal of private advice to students who consult them about plans of studies, and this advice is compared by the students with that of parents, school-teachers, comrades, and older friends. In connection with the annual list of College courses of instruction the Faculties of Law, Medicine, and Science respectively give advice to undergraduates who are expecting to enter some one of these professions, concerning the best courses of instruction for them to take while in College. The advice of the Medical Faculty is very specific, and is generally followed by undergraduates who propose to study medicine in after years. The influence of this Faculty can easily be traced in the table of 350 choices; for the special subjects usually selected by undergraduates who intend to study medicine are French, German, chemistry (Courses 1 and 3), physics (Course 2), and natural history (Courses 2, 3, and 5). (See, for example, 1884, nos. 43, 50, 60, 64, 133, 174; 1885, nos. 5, 18, 42, 100, 149.) On the other hand, the Law Faculty recommends so many subjects that its influence cannot be traced in the table.

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* As specimens of these explanations and injunctions the following sentences are taken from the list for 1884-85: — SPANISH. "Course 1 is open to those only who have not before taken a course in Spanish. Courses 1 and 2 cannot be taken together. Course 3 is open to those only who have taken Courses 1 and 2 with marked success." "Students are not permitted to elect Italian 1 and Spanish 1 in the same year."

POLITICAL ECONOMY. "Course 4 requires no previous study of Political Economy." "It is recommended that Courses 6 and 8 be taken together." "As a preparation for Courses 2, 3, 5, 6, 7 and 8 it is necessary to have passed satisfactorily in Course 1."

PHYSICS. "Course *A* and Course 2 are suitable for Freshmen." "Course *A* is adapted for Freshmen who have passed on the Prescribed Physics only in the examination for admission. It may be taken by those who presented the Elective Physics for admission, but for such students it will count only as a half-course." "Freshmen who wish to take Course 2 must consult the instructor in advance. It is open to those only who have passed *satisfactorily* in Physics — either Prescribed alone, or Prescribed and Elective — at the examination for admission." "Courses 1 and 4 can be pursued only by students who are able to solve readily problems in Algebra and Trigonometry, and Course 4 will in addition require similar familiarity with Analytic Geometry. The same requisitions are made for Course 5, together with some knowledge of the Calculus." "Course 9 is open to those only who have already taken Physics 2 and Mathematics 2. Students taking this Course are strongly urged to take with it Mathematics 5."

Although no professional subjects or applied sciences find place in the College courses of instruction, it is, nevertheless, an important advantage of the elective system that it permits undergraduates who know what profession they are to follow to select those College subjects which afford the best foundation for their future professional studies. For the future minister, lawyer, physician, teacher, or engineer there is a special motive for decided and coherent choice among the 200 courses of instruction offered by the College; and a wise choice will take great account of the intended profession. On the other hand, there are some students who, knowing the professions for which they are destined, think it best to take in College studies of a character quite unlike that of their future professional studies.

Such, in brief, are the measures which the College Faculty has taken to give effect to the natural principles which determine coherence and consecutiveness in individual choices of studies which extend through several years. These measures, though fairly effective, are far from being complete; they can be both improved and extended without change of fundamental plan or policy.

The Faculty has, however, gone beyond giving appropriate information, in order to promote continuity of study; it has offered two distinct inducements to moderate concentration of work. The first of these inducements is "Second-Year Honors" in Classics and in mathematics, the second is "Honorable Mention" at graduation. The effect of Second-Year Honors is to concentrate not quite one year's entire work upon Classics or mathematics as the case may be (for the present regulations see Appendix, p. 187). They are most frequently taken at the end of the Sophomore year, but Juniors also take them. In the table of choices, the persons who arranged their studies with reference to Second-Year Honors in the Classics may be recognized by the choice of the composition courses in Greek and Latin (Greek 3 and Latin 3) in the Sophomore year. (See, for example, 1884, nos. 3, 8, 12, 13, 14; 1885, nos. 62, 64, 66, 71, 104.) Candidates for Second-Year Honors in mathematics may be recognized by their choice of Mathematics 2 and 3, or 2 and 4, or 2, 3, and 4 in the Sophomore year. (See, for example, 1884, nos. 4, 24, 31, 35, 51; 1885, nos. 1, 10, 16, 51, 57.) Persons not infrequently aim at Second-Year Honors in Classics at the end of the Sophomore year, and thereupon drop the study. (See 1884, nos. 13, 15, 22; 1885, nos. 21, 28, 38.) The number of persons who took Second-Year Honors in

	1882.	1883.	1884.	1885.
The Classics was	24	24	18	15
And in mathematics was	5	8	5	8

By its regulation concerning Honorable Mention* at graduation the Faculty offers an inducement to concentration of work to the extent of three courses (one quarter of three years' work) in a single department. The offer of this modest distinction, which is probably within the reach of three quarters of the students, affects the choice of studies of a large proportion of every class. The effect of the regulation is very conspicuous in the table of choices. In the class of 1884, one hundred and fourteen persons won honorable mention, fifty-nine in more than one subject. In the Class of 1885, ninety-two won honorable mention, forty-four in more than one subject.

3. The commonest objection urged against the elective system by persons who have formed their opinion of the character of American students by observing their disposition and habits when held to a prescribed curriculum, is that students who are free to choose their studies will, as a rule, select the easiest studies simply because they are easiest, or put themselves, by

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* "The usual ground of Honorable Mention in any study will be the attainment of a general average of eighty per cent of the maximum mark in the equivalent of three elective courses in that study."

preference, under the instruction of easy-going professors who give high marks for little work. It will be interesting to see just how far this *a priori* objection is borne out by the facts. To secure an adequate discussion, the choices of all students in the period 1881–1885 may advantageously be taken into consideration and not merely those of the classes of 1884 and 1885. Nevertheless the table of 350 choices will supply many convenient illustrations.

A course of instruction may be easy because it is designedly conducted by an easy-going or unfaithful teacher in a lax way, or because its subject is inherently easy, or thirdly because a skilful and conscientious teacher thinks it wise to do most of the work himself and to allow the class to remain passive. Now the idea that teachers in Harvard College purposely conduct their courses in an easy or lax way, to the injury of their instruction and the disadvantage of their students, in order that their courses may be popular and large, does not deserve serious notice. No instructor has anything to gain by attracting a large number of students to his course; on the contrary, he will have much less labor and trouble with a small class than with a large one. An instructor may think it for the interest of his department, as a whole, that its lower course or courses should be followed by a large number of students; but this is not a personal interest, it is an interest in that kind of scholarship and learning to which he is himself devoted. He is not likely to imagine that he can promote the interest of his department by doing shabby work at its foundations, or by attracting to it a large number of lazy students. It is obvious that among eighty teachers there must be differences as regards vigilance and strictness — differences due to temperament, habit of mind, and physical peculiarities; but if a teacher conducts a course in a lax way, because it is his nature to do so, the evil which results is not attributable to the elective system, but to his personal deficiencies. He would be quite as poor a teacher under a compulsory system, and under that system every student would be subjected to his influence. We may therefore dismiss the first mode of accounting for the supposed existence of easy popular courses, and proceed to examine the second explanation — namely, that the subjects are easy.

If the principle on which the objection under consideration is founded be true, the easiest courses will be largely attended, or conversely the much-chosen courses will include all the easiest. The following table, compiled from the Dean's annual reports, contains all the courses of instruction which were attended by more than fifty students in each of the years mentioned. The low limit of fifty persons is chosen in order to include in the table all the courses which can be suspected of being popular because they are easy. Fifty is a low limit, because it is only about a fifth of an average College class, and because it is less than five per cent of the whole number of persons who made choice of electives in 1884–85. It is conceivable that a course of instruction which attracted fewer than fifty students should be easy; but then the students as a body, on the theory of the objection under examination, could not have found out that it was easy, or they would have thronged it.

On examination of the subjects of the courses included in the table it appears that they are, with two exceptions (Fine Arts 3 and Music 3), the inevitable subjects of the less advanced courses under any conceivable college system, whether prescribed or elective. In Latin, Greek, German, French and mathematics these courses simply carry on instruction from the more elementary stages already reached at school or in college by those who choose them. In philosophy, political economy, history, chemistry, and natural history, these courses are the necessary courses for beginners (except History 11, 12, and 13, which are not elementary courses). It is only through these lower courses that the advanced courses in these important subjects can be reached, and this fact alone is sufficient to account for the resort to them. As to courses 11, 12 and 13 in history it is to be observed that 11 and 12 are given only in alternate years so that the number electing these courses in each class is in fact only about half of the number given in the table. The large number electing 13 are certainly not attracted to it by any expectation of finding it an easy course, for it is known as a distinctly hard one. These three courses cover English and Continental history since the beginning of the 17th century, and the history of the United States under the Constitution. They treat therefore of periods

ALL THE COURSES WHICH CONTAINED OVER FIFTY STUDENTS IN THE YEARS FROM 1881 TO 1885.

1881-82.	1882-83.	1883-84.	1884-85.
			Greek *B* . . . 51
			Greek 2 . . . 57
Greek 3 (5) . 61	Greek 3 (5) . 64	Greek 3 (5) . 68	
			Greek 10 . . 51
			Latin *B* . . . 81
Latin 1 . . . 59	Latin 1 . . . 69	Latin 1 . . . 54	
			Latin *C* . . . 85
		Latin 2 . . . 61	Latin 2 *a* . . 54
			" " *b* . . 72
English 2 . . 60		English 2 . . 68	English 2 . . 85
			English 12 . . 69
			English 7 . . 106
German 1 . . 85	German 1 . . 97		German 1 . . 91
German 2 . . 62		German 2 . . 75	German 2 . . 90
German 6 (3) 67			
French 1 . . 59		French 1 . . 73	French 1 . . 122
French 5 (8) . 66	*French* 5 (8) . 57	*French* 8 . . 58	*French* 8 . . 171
Philosophy 1 56	Philosophy 1 . 76	Philosophy 1 . 76	Philosophy 1 . 63
		Philosophy 2 . 81	*Philosophy* 2 . 55
		Philosophy 3 . 89	*Philosophy* 3 . 55
Polit. Ec. 1 . 147	Polit. Ec. 1 . 155	Polit. Ec. 1 . 209	Polit. Ec. 1 . 166
			Polit. Ec. 4 . 152
History 2 (h) 90	History 1 . . 102	History 1 . . 98	History 1 . . 195
History 3 (2) 86	*History* 2 . . 60	*History* 2 . . 115	*History* 2 . . 241
History 9 (13) 119	History 12 (13) 163	History 13 . . 66	History 13 . . 93
	History 10 (11) 84		History 11 . . 110
History 11 (12) 117		History 12 . . 111	
			Music 3 . . . 81
			Mathematics *A*, 71
Fine Arts 3 . 77		Fine Arts 3 . 127	
	Fine Arts 4 (h) 72		
Chemistry 1 . 101	Chemistry 1 . 59	Chemistry 1 . 90	Chemistry 1 . 101
Phys. Geog. 1 69	Phys. Geog. 1 70		Phys. Geog. 1 56
Zoölogy 2 . . 54	Zoölogy 2 . . 104	Zoölogy 2 . . 105	Zoölogy 2 . . 98
		Botany 3 . . 57	Botany 3 . . 59
Geology 4 . . 68	Geology 4 . . 185	*Geology* . . . 91	*Geol.* 4 *a*, 111 " " *b*, 62 } 173

NOTES. — A figure in parenthesis is the number of the course in 1884-85. (h) indicates that no equivalent course exists in 1884-85. Italics indicate half-courses and in 1881-82 courses of two hours weekly.

and topics full of interest and attractiveness for the general mass of the students. The three courses in English are far from easy, and it is notoriously difficult to win high marks in the one which has been most steadily large, namely English 2. The course called Fine Arts 3 is not given oftener than every other year, its subject being the history of Greek Art. It is an interesting and profitable course of study, which has natural connections with the department of Greek on the one hand and of history on the other. The course called Music 3, which only appeared as a large course in 1884–85 and has disappeared as such in 1885–86, is undoubtedly the easiest of the six courses which are offered in music, the others being all technical and difficult courses on the theory of music. It might well be that eight per cent of the persons in College in 1884–85 had that intelligent interest in the history of music which made this course a proper selection for them; but it is no doubt true that some persons chose it without adequate reason because they believed that it was an easy course. It may be added that, if any course is thus temporarily misused, it is always the desire and interest of the instructor to correct such a misuse, and it is quite within his power to correct it promptly.

This table of large elective courses contains about half of all the choices which were made in the years 1881–82, 1882–83, and 1883–84, and about three fifths of all the choices made in 1884–85.

	1881–82.	1882–83.	1883–84.	1884–85.
All choices numbered	2684	2958	3050	4127
Choices in table "	1330	1358	1555	2491

The large increase in the number of choices in 1884–85 was due to the fact that in that year a little more than half the work of the Freshman year became elective. The Freshmen were of course incompetent as a rule to take any but the more elementary courses. Their presence is especially noticeable in the large increase of numbers in French 1, and in the two elementary courses in history during that year.

With the exception of the English courses and History 11, 12, and 13, which are not properly to be called elementary, and of Fine Arts 3 and Music 3 which are courses peculiar to this

College and derive their character entirely from the eminent professors who give them, the courses contained in the table constitute a body of instruction of the more elementary sort on subjects which every college should teach, which every respectable college does teach, and which are no easier under an elective system than under a compulsory system. The criticism which a partisan of compulsion would naturally make on the state of things exhibited in this table is—not that too many students have taken these courses, but too few—that everybody ought to be compelled to take a large part of them. Under a system of uniform prescription, all courses of instruction are, at the best, of the general quality of the courses contained in this table, and the methods of instruction must be suited to the average student.

Four kinds of persons choose the courses of this table,—first, Freshmen and Sophomores who thus carry on the studies which they have previously pursued, or take up new subjects early in their college course in preparation for more advanced instruction in the later years (see 1884, nos. 6, 33, 41, 43, 89, 90, 108); secondly, students of any class who having determined to devote themselves in the main to certain departments, nevertheless wish to take elementary courses in other departments (see 1885, nos. 10, 11, 24, 38, 56); thirdly, young men of limited capacity who cannot prudently attack many of the advanced courses, and are really forced to content themselves for the most part with elementary work; and lastly, a few incorrigibly lazy persons, sometimes dull and sometimes bright by nature, who take pains to choose the most elementary courses in the various departments. The indolent youth who has no appetite for any serious labor exists at Harvard College, and may be discovered by diligent search in the table of choices. Doubtless he is a familiar presence at most American colleges; else his characteristics would not be so freely used as an argument for and against college systems of instruction and discipline. He is to be seen in many famous European universities. Indeed, he has existed and will exist under all college systems.

Thirdly, in the literatures and natural sciences there is room for a few half-courses which are made easy for the class by a skilful teacher doing a large part of the work himself. Such half-courses, if serious and instructive, may properly be provided under any college system, elective, prescribed, or mixed. They create or keep alive interest in a subject, or give accurate elementary notions of it, or serve as a relaxation from the severer labors of the student.

4. The next inquiry is — what does the table of 350 choices teach with regard to the expediency of limiting choice by prescribing groups of cognate studies; so that the student must elect between groups of subjects and not between subjects taken singly.

In the first place, it is to be observed that among all the 350 choices no two have been found which are alike, and that no discernible groupings prevail among them, other than the partial groupings which may be attributed to the regulations concerning Honors. When they begin to choose their own studies, brothers, comrades, and boys from the same school, part company; each takes his solitary way, and at the end of the College course of two whole classes, it appears that no two individuals have trodden the same path. To fetter this spontaneous diversity of choice, which corresponds to the infinite diversity of mind and character in the choosers, by insisting that studies shall be taken in certain mixtures or groups, which some other mind has arbitrarily compounded, is as unnatural as it is unnecessary. It is unnatural; for minds differ infinitely, and do not fall into six or eight strongly marked categories; it is unnecessary; for all desirable concentration and continuity of work can be secured without doing such violence to liberty of choice. Secondly, the group system is objectionable because it commits a student early in his College course to a set of studies from which he will find it very difficult to escape later in his course, if he change his mind. This early committal may be a matter of necessity in a professional or technical school; but there is no need of it in a college of liberal arts. Thirdly, the existence of groups is apt to modify — not to his advantage — the advice given to the individual student on his choice of studies. Groups are like ready-made clothing, cut in regular sizes; they never fit any concrete individual. Either the needs of the advised must be somewhat disregarded, that he may be forced into a group, or a group must be patched to make it cover fairly well the individual case. In either event the existence of the group is nothing but an embarrassment both to the conscientious adviser and the advised. To impose upon a youth for two or more years a wrong group of studies, from which he cannot extricate himself, is a much more serious matter than to allow him to choose amiss one or two studies which he can easily replace. In the fourth place, the group system impairs a precious privilege which every teacher enjoys under a system of free election — the privilege of having no student in his class who has not freely chosen to be there. This is a great privilege, and at the same time it is a great incitement to judicious and spirited work. The group system forces a student, who desires to study some of the subjects which compose a group, to take the rest in which he may have no such interest; and consequently it compels teachers to receive reluctant pupils. Lastly, the group system, if rigidly organized and strictly enforced, compels specialization in studies, — a kind of compulsion which is peculiarly unwarrantable. If the groups are made up of closely related subjects, and each group is large enough, or more than large enough, to occupy all the student's time, it is obvious that to limit the student's choice to the choice of a group is to compel specialization. If the groups do not contain subjects enough to occupy all the student's time, he may be permitted to choose two groups, or to choose one group for his main work and to fill up his time with subjects taken from another group or groups. This still means a forced, although less narrow, specialization. If the student be permitted still greater freedom to cut across the groups, or if the groups be made up of miscellaneous subjects instead of related subjects, the whole object of the group system is defeated, and the system itself is merely a cumbrous and useless piece of machinery.

It appeared from the discussion of the amount of specialization of studies exhibited by the classes of 1884 and 1885, p. 33, that less than eight per cent of the members of those two classes specialized their work to the amount of two thirds of their time for three years, or in other words to the amount of two whole years of the College course. A rigid system of groups, applied to the Junior and Senior years only, would compel every student to specialize his work to a degree which less than eight per cent of the combined classes of 1884 and 1885 thought desirable in their own cases. To avoid this intolerable evil the groups would necessarily be made flexible, and in precise proportion to their flexibility they would fail to answer their theoretical purpose. A group system which was flexible enough to avoid inflicting serious harm upon individuals would be more complicated than a system of free choice under the natural limitations, but would yield nearly the same results.

5. The working of the elective system is also interesting in quite a different direction — namely, in its effect upon the common intellectual life of the College. It has certainly produced a great increase in intellectual intercourse and spontaneous association for intellectual objects among the students. Young men who find themselves associated in the pursuit of the same or kindred studies not only talk and work together over them, but unite in societies or clubs for the discussion of subjects connected with those studies. Separate societies or clubs are maintained in the following departments — Classics, history, political economy, philosophy, chemistry, natural history and fine arts, — besides the religious and musical societies and the Union, which is a society for practising public speaking. There are also several small societies in which the bond of union is a desire for literary excellence, and the tests for admission are some skill in writing and some cultivated taste in reading. A common interest in the same studies, and in questions arising out of these studies, is the fundamental reason for the existence of all these societies or clubs; but the profit and pleasure derived from them are much increased by the variety of studies and intellectual interests found among the members of each society alongside of the common study or pursuit. To the delights and benefits of intellectual society diversity of gifts and acquisitions contributes quite as much as community of interests and pursuits. Both are necessary, and both are found as natural fruit of the elective system. These patent facts can easily be illustrated from the table of 350 choices. Thus, in 1884, nos. 1, 12, 20, 21, 26, 36, 37, 68, 73, 75, 92, 95, 116, 144, 167 of the Class of 1884 with no. 161 of the Class of 1885

constituted a well-known small literary society in which the members enjoy a close intellectual intimacy. In 1885, nos. 19, 28, 33, 36, 50, 56, 63, 65, 66, 71, 73, 79, 93, 110, and 164, with two persons not in that table, constituted the same society. On examining the choices of studies made by the members of this society the community and the diversity of pursuit which made their association interesting alike appear. Moreover, the maintenance of this intellectual intimacy does not depend in the least upon a common purpose to follow the same profession. A club of fifteen young graduates was lately formed for enjoyment and mutual improvement, nine of whom were recent members of this same society, while the other six were young men of a kindred spirit. The club holds stated meetings with a lecture by some member at each meeting. The present occupations of these young men are as follows: two are divinity students, two law students, two medical students, three are in business, two are teachers, one is a library expert, one an electrical engineer, one a student of history, and one of natural history. Yet they have keen enjoyment in an intellectual companionship which, originally founded upon similar tastes and pursuits, has developed in them a like intellectual temper or tone of mind, and will only be enriched by diversities of mental occupation and experience.

It ought to be observed, moreover, that the elective system has greatly increased the amount of familiar intercourse between teachers and students at Harvard College. The numerous small elective courses, the laboratory courses, the stated "conferences" and "meetings for discussion" which are held in several departments, and the societies and clubs in which both teachers and students take part, all tend to establish pleasant and profitable personal relations between teachers and students.

6. Finally, the table of 350 choices shows very clearly what the degree of Bachelor of Arts means at Harvard University, and what it does not mean. It does not mean that all Bachelors of Arts have passed through the same course of studies in college; and since the action taken in 1884, which made three fifths of the work of the Freshman year elective, it does not mean that all Bachelors of the same year have necessarily

studied together while in college any subject except rhetoric and English composition and the barest elements of chemistry and physics. It does mean that all Bachelors of Arts have spent from seven to ten years, somewhere between the ages of twelve and twenty-three, in liberal studies. They have all learned at school the elements of three languages besides English — namely, Greek, Latin, and French or German — the elements of mathematics and physics, a little ancient history, and something of English literature. They must also have gone, while at school, somewhat beyond the elements in at least two of the four subjects, Greek, Latin, mathematics, and physical science. At college they must have added the elements of a fourth language, — German or French, — to the three studied at school, beside pursuing the few prescribed studies above mentioned; and they must further have spent three years and a half upon a prescribed quantity of liberal studies, each person having been at liberty to select his own subjects of study during those three years and a half, and all studies being accounted liberal which are pursued in the scientific spirit for truth's sake. Such being the comprehensive signification of its degree of Bachelor of Arts, the University has no occasion for the great variety of special courses, with degrees in letters, philosophy, political science, journalism, and so forth, which other institutions have established. Every student makes his own course for three years and a half, and the common goal of all courses of liberal study is the degree of Bachelor of Arts.

In the Report of the Dean of the College will be found several tables which bring out clearly the use made of limited options among different studies at school and in the Freshman year, and of free choice of studies later in the College course. Thus it appears (p. 67), that at school more than five-sixths of the boys choose Latin and Greek, when they have a choice of two out of the four subjects Latin, Greek, mathematics and physical science; in the Freshman year, tendencies appear (p. 103) toward history, a modern language, and natural history; while finally an exhibit in per cents of the distribution of the elective work of undergraduates among the different departments of instruction for six years past (p. 99) shows that the only subjects which have made a decided gain within that period are English and political economy. Finally the Dean, in a very interesting table on p. 102, institutes a comparison between the distribution of studies in 1864–65, under a system which was nine-tenths required, and the average distribution in the period 1879–85, under a system only four-tenths required. The subjects which have lost time are Greek, Latin, English, philosophy, mathematics, physics, and chemistry; the old subjects which have gained time are German, French, Italian, Spanish, political economy, history, and natural history; the new subjects are Semitic languages, Sanskrit and Zend, Roman Law, history of the fine arts, and history of music. It is to be remembered that in this comparison the time lost is only time devoted to elementary work with classes containing many unwilling students; and that in all departments the level of instruction has risen very much during this period of twenty years.

The table of the age of the Freshman class on entering for the past twenty years (Appendix, p. 188) brings out some interesting facts. It appears that the average age at admission was below 18 until 1860, and below 18½ until 1873; that in the next ten years it rose gradually to 19 and that since 1882 it has fallen a little. The present requirements for admission have been exclusively in use only since 1881. It was hoped that they would tend to reduce the average age of admission, and the hope has not been altogether disappointed. The Faculty see with satisfaction that few boys now enter before they are 17; but they would also see with satisfaction a decrease in the proportionate number of those who are over 19 at entrance. Eighteen is the best age to enter.

The table of schools and colleges from which young men have entered Harvard College during the past ten years (Appendix, p. 189) reveals the fact that out of 228 High Schools in Massachusetts only eleven can be said to send pupils regularly to the College, and that the High Schools of only four cities outside of Massachusetts send pupils hither with reasonable steadiness. These four cities are Newport, R. I., Cleveland, Cincinnati, and San Francisco. On the other hand, the number of public schools the country over which from time to time send boys to the College keeps increasing. In the period 1867—1874 there were fifty-two such schools; in the period 1871—1880 there were 78; and in the period 1876–85 there were 81. In the following table the sources of supply for the College are classified for twenty years, and the percentage of each entering class which came from public schools is given. Dividing the twenty years into periods of four years each, the percentage from public schools changes as follows — 1866–69, 30 per cent; 1870–73, 33 per cent; 1874–77, 29 per cent; 1878–81, 31 per cent; 1882–85, 26 per cent. The tendency is in the wrong direction; for it would be a great misfortune for the College to lose connection with the public school system.

Year.	From Public Schools.	From Endowed Schools.	From Private Schools.	Private Pupils.	From Colleges.	Total.	Percentage from Public Schools.
1866	45	38	21	36	4	144	.3125
1867	42	41	39	47	7	176	.2386
1868	39	34	30	38	5	146	.2671
1869	60	47	22	26	4	159	.3773
1870	75	41	33	41	8	198	.3787
1871	70	44	42	39	8	203	.3448
1872	50	66	30	30	7	183	.2732
1873	72	66	37	46	6	227	.3171
1874	54	57	25	46	18	200	.2700
1875	80	79	32	53	14	258	.3100
1876	51	75	35	49	15	225	.2266
1877	86	64	31	46	12	239	.3598
1878	80	74	36	28	14	232	.3448
1879	72	72	47	38	16	245	.2938
1880	69	67	41	42	14	233	.2961
1881	69	64	26	48	23	230	.3000
1882	82	70	51	53	25	281	.2918
1883	65	85	62	36	20	268	.2425
1884	64	73	73	38	38	286	.2237
1885	74	74	60	29	27	264	.2803

On the 16th of February the President and Fellows received a petition from a large number of undergraduates asking that attendance at morning prayers be made voluntary for students twenty-one years of age, and optional according to the wishes of their parents or guardians for minors. At the same meeting the following vote passed by the College Faculty was received — "*Voted*, that the Faculty reaffirm their opinion that attendance at morning prayers should be made voluntary; but that they do not approve the recent petition of the students concerning such attendance." The President and Fellows denied the petition, but forwarded it to the Overseers with the vote of the Faculty. On the 8th of April the Overseers voted that it was inexpedient to grant the petition.

Increase in the number of students, and in the interest which the students take in field sports and in exercises inside the Gymnasium, obliged the Corporation to appoint early in the year an assistant in physical training at a salary of $1250. The expenses of that department are now over $9000 a year; but the Corporation does not consider this expenditure unprofitable or disproportionate. About five per cent of the amount of the tuition-fees paid in Cambridge goes to the department of physical training. In order to encourage the game of lawn tennis, which is an excellent one for college uses, the President and Fellows agreed to lend the Lawn Tennis Association a sum not exceeding $1500 to be spent in laying out a large number of clay courts. The money lent to the Athletic Association the year before was repaid with interest in the spring of 1885.

The statutes were amended during 1884–85 in three respects. Statute 14 (now 15), which relates to religious services, was amended at the instance of the College Faculty (see Dean's Report, p. 70) by striking out the paragraph which required notice to be given of the intention of a student to pass Sundays with his family, and the paragraph which required every student who did not pass Sundays with his family to attend public worship on each Sunday morning in term time.

A new statute concerning "Students not candidates for a degree," numbered 10, was adopted by the President and Fellows Jan. 12, and by the Board of Overseers June 3, 1885, in the following terms: — "Persons who are not candidates for a degree may be admitted to any of the courses given in the University provided that they satisfy the appropriate Faculty of their fitness to pursue the particular courses which they elect. The several Faculties have the right to deprive any such student of his privileges, if he abuse or fail to use them." This statute is practically a re-enactment of the statute on the same subject which was in force from 1825 to 1847. It legalizes a class of students which is increasing in number, and, in the College at least, improving in quality (see Dean's Report, p. 73). When the Overseers consented to the adoption of the new statute, they passed a resolution urging that great care be taken in admitting special students, and that only those persons should be admitted who come with genuine purposes of study. It is obvious that watchfulness is needed in two directions: in the first place special students do not necessarily come, like regular students, from schools or colleges where they have been long under observation; hence the University runs some risk in enrolling them without examination, particularly as four months, and in professional departments nine months, may elapse before they can be brought to the test of several thorough examinations. Secondly, it might be apprehended that the facility with which special students may enter the University would tend to diminish the number of the regular students who are candidates for a degree. There is a suspicion that the registration of special students in the Law School is working in this way.

By an amendment of Statute 8 the 30th of May (Memorial Day) was made a University holiday.

The number of persons who study at this University after taking degrees at other institutions (not including regular students of Divinity, Law, and Medicine) continues to increase. In 1884–85 there were 56 such students, divided among the departments as follows: —

Candidates for the A.B. (members of College classes)	21
Resident graduates at the Divinity School	6
Special students " " " "	5
" " " " Law "	4
Resident graduates not candidates for a degree	8
Candidates for the A.M., Ph.D., or S.D.	12
Total	56

The interesting report of the Acting Dean of the Divinity

School (p. 107), calls attention to the number and quality of its resident graduates, to the resort of students in other departments to its courses of instruction, to the success of a limited elective system which has been established in it, to its provision of systematic instruction in methods of social reform, and to its needs as regards buildings and grounds. Since the report was written the immediate construction of the new Library building has been made sure, mainly through the efforts of the Society for Promoting Theological Education — the same Society under whose auspices Divinity Hall was built sixty years ago.

The Law School Report (p. 112) presents no new features; but the Treasurer's Statement (p. 5) gives an excellent account of the financial position of the School. It is now reaping the full benefit of the recent additions to its endowments, — namely, Austin Hall $140,500, the new Professorship Fund $90,000, and the Book Fund $32,000. Its chief need is now another endowed professorship. The present Faculty is not sufficiently numerous to deal with all the subjects which ought to be included in its programme of instruction.

The most interesting points in the Report of the Dean of the Medical Faculty (p. 116) are the amount of medical and hygienic research made in the laboratories of the School, and the suggested feasibility of prolonging the course required for the degree to four years. There can be no doubt that in the interests of the profession and of the community the course ought to be prolonged, if the School can be maintained on that plan. The Medical Faculty has given abundant proof that it wishes to do the best work, rather than to attract a large number of students; but it feels obliged to measure carefully the risks to which the prolongation of the course might expose the present excellent School. During the past four years nine per cent of the graduates of the School have taken the four-years' degree. To maintain the present salaries and establishment the School has, and must have, an income of $64,000. At present about $53,000, or more than four-fifths of the School's income, are derived from students' fees, and the tuition-fee is higher than in any other department of the University. How great the reduction in the number of students would be, if four years' study were required for the degree, no one can tell; but a reduction of twenty per cent seems a very low estimate.* To provide against even this moderate reduction in the amount of students' fees, an additional endowment of $210,000 would be needed.

The year 1884–85 was a successful one in the Dental School. (For the Dean's Report, see p. 125.) Its debt was reduced to $4947.04; its equipment was better than ever before, its students more numerous, and its instruction more complete. In 1885 an examination for admission to the School was enforced for the first time, with the result that the number of students in the first class (1885–86) was reduced to four, the number in previous years having usually been from ten to fourteen. The prescribed examination is of the simplest character. Every candidate for admission must write an English composition of not less than two hundred words, and also write a piece of English prose from dictation; he must further exhibit a competent knowledge of Balfour Stewart's Elements of Physics, or of some equivalent book. The fact that such an examination proved deterrent is a curious comment upon the condition of New England schools.

The School of Veterinary Medicine enlarged its Hospital during 1884–85 and arranged its complete curriculum of three years' instruction. Experience has shown, first, that the subscription plan is less successful than was hoped; the small number of subscribers using their privileges to the full. The plan depended for success upon obtaining a large number of subscribers, of whom many, it was supposed, would make small use of their privileges. Secondly, it seems that the hospital-

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* A reduction of twenty per cent from the School of the current year would mean a School divided into four classes as follows: —

1885–86.		Reduced School.	
First Class	90	First Class	65
Second "	84	Second "	52
Third "	65	Third "	47
Fourth "	18	Fourth "	42
Resident Graduates .	7	Resident Graduates .	5 (Average of past 2 yrs.)
	264		211

In this computation allowance is made for the usual losses at the end of each School year, and in the other direction for a larger fourth-year class.

charges for board and treatment are somewhat lower than they should be. The Report of the Secretary (p. 131) gives interesting details of the development of the School and Hospital. In another year it will be possible to strengthen the staff of the School from its own graduates. The School urgently needs an endowment of $50,000.

The Faculty of the Lawrence Scientific School made an important revision of its four principal courses of instruction, each of which covers four years, with the general purpose of utilizing all appropriate instruction given in the College, removing all incongruities and interferences, and reducing somewhat the amount of work required of the regular student. (See the Report of the Secretary, p. 127.) The vacancy created by the death of Professor Eustis was filled by the election to the professorship of Engineering of Winfield Scott Chaplin, a graduate from West Point in 1870, who has had wide experience both in the practical work of the engineer and in teaching engineering.

The Herbarium (see p. 142) has become an important botanical centre, much resorted for consultation and study. Its endowment, in addition to the building, amounts to only $18,397.09, the income of which barely suffices to meet current expenses, without any allowance for salaries. Professor Gray receives no salary, and the small salary of the Curator is only met by an annual gift from the Trustees of the Massachusetts Society for Promoting Agriculture. Furthermore there is urgent need of an assistant to relieve the Director and the Curator of mechanical and routine work. In order to put the Herbarium on an adequate and permanent foundation additional endowment to the amount of $70,000 is needed.

The remarks of the Director of the Botanic Garden on the gradual formation of a botanical museum (p. 146) are commended to the attention of lovers of botany.

The Director of the Arnold Arboretum describes (p. 147) the plan upon which the Arboretum is to be permanently planted. To make this plan has demanded foresight, knowledge of trees as respects habit of growth, hardiness and durability, acquaintance with earlier attempts to form instructive collections of trees, and judgment in deciding upon the best limits of the undertaking. It is a responsible matter to make a plan which cannot develop its merits in less than forty years, and which cannot be changed after the first few years without great loss. The Director has given much study to the preparation of the plan, and has moreover sought the best professional advice upon the subject.

The number of students who work in the Chemical Laboratories increases from year to year (p. 153), the elementary courses of instruction being resorted to by many young men for their educational effect, the higher courses being taken almost exclusively by men who mean to be professional chemists or teachers of chemistry. The Corporation did not find means to make the much needed improvements in the upper story of Boylston Hall, which were mentioned in last year's report.

The first report of the Director of the Jefferson Physical Laboratory (p. 155) shows how the work of the establishment has been divided between elementary instruction, advanced instruction, and original research, and what fruit rewarded the labor of the investigators. The work of furnishing and equipping the laboratories and organizing the service of the building was prolonged through the greater part of the year, and occupied much of the time of the Director. The excellent adaptation of the building to its uses was conspicuous throughout the year.

The Report of the Director of the Observatory shows an astonishing activity and productiveness; but also a grievous need of larger pecuniary resources. When the bequest of that life-long friend of the Observatory, Robert Treat Paine, is realized, this want will be measurably supplied.

The annual report of the Curator of the Museum of Comparative Zoölogy is always full of interest; but this year more than ordinary interest attaches to it (p. 168); for in it the Curator has given a résumé of the history of the Museum for twenty-five years, and has sketched the outlines of its future development. The great establishment is, in the main, the product of the intelligence, self-devotion, and enthusiasm of two men, — father and son. Not only does it greatly serve the public through its exhibition-rooms, and investigators through its ample collections, but it has also, within the past three years become quite essential to the University as the place where a large number of students are daily instructed in well-equipped laboratories of natural history. Moreover, its general educational influence upon all departments of study and research at the University, even upon those apparently most remote from its field, has been very striking ever since the first section of the building was opened.

Various forms of the College seal having been in use for some years in the different offices of the University, the President and Fellows on the 8th of June, 1885, adopted a new and carefully-studied form of the seal in lieu of all existing forms.

The accounts of all the departments of the University for 1884–85 were satisfactory in their result (Treasurer's Statement, pp. 4–6). There was a surplus of receipts over expenses in every department except the Observatory and the Veterinary School, and in those departments the adverse balances were small. At the same time every legitimate resource was used. The Corporation have only to regret that they were obliged to postpone certain repairs upon College buildings which ought to have been made last summer.

Among the gifts of the year were three of peculiar interest. Professor John Tyndall of London gave $10,800 to found a scholarship for the promotion of the study of theoretical physics. The circumstances and conditions of this gift are so unusual that the papers concerning it are printed in full in the Appendix, p. 194. Mr. John Eliot Thayer, a graduate in arts of the Class of 1885, gave $15,000 as a permanent fund, the income of which is to be used for encouraging the publication of contributions to political economy. Gifts of this sort would be useful in many departments of the University. Mr. Samuel J. Bridge gave the University an ideal statue of John Harvard in bronze, designed by Daniel C. French of Concord, Mass. This interesting statue was unveiled with appropriate observances on October 15th, 1884; and in the following June Mr. Henry F. Waters published the first authentic accounts of the Harvard family of Southwark, to which John Harvard belonged.

The usual information concerning the number of students, and the honors, prizes, and degrees given in 1884–85, together with a list of the examining committees appointed for that year by the Board of Overseers, will be found in the Appendix (pp. 179–207). The attention of the Overseers is respectfully invited to the following reports from the Deans or Secretaries of the several Faculties, the Secretary of the Academic Council, the Librarian, the Directors of the Herbarium, Botanic Garden, Arnold Arboretum, Chemical Laboratory, Jefferson Physical Laboratory, and Observatory, and the Curator of the Museum of Comparative Zoölogy.

CHARLES W. ELIOT, *President*.

CAMBRIDGE, January 12th, 1886.

REPORTS OF DEPARTMENTS.

REPORTS

OF THE

DEANS OF THE FACULTIES, THE SECRETARY OF THE ACADEMIC COUNCIL, THE LIBRARIAN, THE DIRECTORS OF THE HERBARIUM, BOTANIC GARDEN, ARBORETUM, CHEMICAL LABORATORY, JEFFERSON PHYSICAL LABORATORY, OBSERVATORY, AND THE CURATOR OF THE MUSEUM OF COMPARATIVE ZOÖLOGY.

To the President of the University:

Sir, — I have the honor to submit the following report on the administration of the College during the academic year 1884–85.

The whole number of students in attendance at the beginning of the year was one thousand and six, distributed as follows: —

Seniors	191
Juniors	234
Sophomores	256
Freshmen	255
Whole number of undergraduates	936
Special Students	70
Total	1006

Six Seniors were prevented by ill-health from completing the work of the year; three failed to attain the requisite standard in the examinations; one was under suspension at the end of the year. The remaining one hundred and eighty-one, together with four members of the class of 1884 who had failed to graduate in that year, were admitted to the degree on Commencement Day.

The following table shows the number of Seniors who have graduated in each of the last six years, with the number in each class who have failed to graduate, owing to deficiencies of scholarship: —

	1880.	1881.	1882.	1883.	1884.	1885.
Graduated	162	182	177	203	192	181
Failed	6	9	7	..	2	3

The other three classes of last year have all entered upon the work of the present year with reduced numbers, as appears from the following table, which shows their aggregate losses and gains from October, 1884, to October, 1885: —

	October, 1884.	Loss.	Gain.	October, 1885.
Class of 1886 . .	(Juniors) 234	19	17	(Seniors) 232
Class of 1887 . .	(Sophomores) 256	36	16	(Juniors) 236
Class of 1888 . .	(Freshmen) 255	49	25	(Sophomores) 231

The nature of these losses and gains is shown in detail in the next table: —

	Class of 1886.	Class of 1887.	Class of 1888.	Total for three Classes.
LOSSES.				
Left College without completing the year .	11	17	14	42
Left College after completing the year . .	5	6	9	20
Removed to a lower class	3	8	22	33
Advanced to a higher class	..	5	4	9
Total loss	19	36	49	104
GAINS.				
From higher classes	..	3	8	
From lower classes	5	4	..	
Newly admitted	12	9	17	38
Total gain	17	16	25	58
Net loss	2	20	24	46

Among the forty-two students who left College without completing the year's work are included six whose incomplete record was due to their failure in the examinations. Five of these withdrew voluntarily at the end of the year, on finding that they could not go on with their classes; and one, who had been on probation, was not permitted to return. Ten others, whose conduct on probation had not been satisfactory, were required to withdraw in the course of the year. Nine were obliged by sickness to discontinue their studies, and one died during the year. The rest left College for various reasons of a personal nature.

The twenty who completed the work of the year, but have not returned to College, include three former members of the graduating class, who, although the work they had completed at the beginning of the year entitled them to rank only as Juniors, have been four years in College, and have so nearly made good their deficiencies that they can obtain their degrees by passing certain examinations, without further residence. Two students whose conduct while on probation had been unsatisfactory to the Faculty, were not permitted to return. The withdrawal of the rest was due to personal reasons.

Six of the thirty-three removed to lower classes were interrupted in their studies by sickness. The remaining twenty-seven together with the six mentioned above, whose record at the close of the year was such that they would have been placed in lower classes had they returned to College, constitute the aggregate loss of the classes due to failures in scholarship. To these may be added the ten whose neglect of their studies led to their dismissal before the end of the year, and also two Freshmen, who proved to be insufficiently prepared, and were withdrawn by their parents in view of impending failure. These results, with the corresponding figures for six previous years, are set forth in the following table: —

	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Removed to lower classes .	25	14	22	18	14	7	23	33
Withdrawn during the year	4	11	4	7	3	5	2	12
Total	29	25	26	25	17	12	25	45
Whole number of undergraduates	813	819	813	829	823	885	905	936

The marked increase in the number of students removed to a lower class over that of any recent year was no doubt due in large measure to the newness of the rule, enforced for the first time this year, which requires a student to obtain at least fifty per cent of the maximum mark for each year in order to be promoted with his class. Heretofore a student has been required to attain fifty per cent of the maximum mark for the whole course as a condition of being recommended for the degree, but the poor quality of his work was no obstacle to his promotion at the end of any year, if he had simply passed — that is, obtained the minimum mark of forty per cent — in a sufficient number of studies. If he had not fallen behind his class to the extent of two and a half courses, he was not dropped. It has consequently happened in not a few instances, especially at the end of the Freshman year, that a student was allowed to go on with his class who had attained not much more than forty per cent of the year's mark; and there have been cases in which even that modest average had not been attained. Such persons are not benefited in the long run by being allowed to escape for a time the penalty of their idleness. It is a significant fact that of the ten members of the Freshman class of 1883–84 who would have been dropped under the present rule, but under the old rule were permitted to go on as Sophomores last year, only one is now with his class. Of the rest, some have been dismissed for incorrigible neglect, and those who remain are struggling in a lower class with accumulated arrears of work, with a much less hopeful prospect of regaining their lost ground than if they had been dropped a year ago. The extension of the privilege of election to Freshmen appeared to the Faculty to have removed whatever reason may have existed under the prescribed system for dealing leniently with poor quality of work. The standard set by the new rule is moderate, and within easy reach of any student who is capable of pursuing a college course with profit. The effect of the rule cannot be judged until further experience has shown whether the large number — twenty-two — dropped from the last Freshman class was or was not exceptional, and also what effect this result will have on the number dropped at the end of their Sophomore year.

Of the nine students advanced to higher classes one was a Freshman who had anticipated a portion of the Freshman studies, and by performing additional work during the year qualified himself for admission to the Junior class. The rest were dropped students who made up their deficiencies so far as to obtain restoration to their former classes.

Of the thirty-eight persons newly admitted to the three classes, ten had been members of the College before, and resumed their studies after a period of absence. Three passed the usual examinations for admission to the Sophomore class. Five Special Students were admitted to the same class, having satisfied the Faculty by work done in College that they were properly qualified. Twenty were graduates or students from the higher classes of other colleges. Eight of these were admitted to the Senior, seven to the Junior, and five to the Sophomore class. Seventeen were admitted without examination, two with partial examination, and one after pursuing courses of study here for two years as a Special Student.

The new Freshman class numbers two hundred and fifty-eight, made up as follows: —

Admitted in 1885	224
Previously admitted	12
Removed from a higher class	22
Total	258

The Special Students in attendance at the beginning of the past year numbered seventy. The changes in their number down to October, 1885, were as follows: —

In attendance October, 1884		70
Registered later in the year		1
		71
Withdrew without taking any Final Examination		12
Took Final Examinations in one or more studies		59
Left College before the end of the year	4	
Left College at the end of the year	14	
Admitted to a College class	6	
		24
Returned as Special Students, October, 1885		35
Admitted October, 1885		75
Present number		110

Net gain, 40.

Combining and comparing the statistics which have been given, we obtain the following results: —

Number of students now in attendance: —	
Seniors	232
Juniors	236
Sophomores	231
Freshmen	258
Whole number of undergraduates	957
Special Students	110
Total	1067
Whole number of undergraduates, October, 1884	936
" " " " 1885	957
Increase	21
Whole number of students, October, 1884	1006
" " " " 1885	1067
Increase	61

The usual statistics of the admission examinations are given in the following tables. The June examinations were held this year as heretofore at ten places in this country by officers sent there for the purpose, and also at Bonn, Germany, where they were put in charge of Dr. Fowler, who was pursuing his studies there at the time as the holder of a Parker fellowship. The plan of holding the examinations in Europe was adopted in response to the request of persons living there, who pointed out the great convenience such examinations would be to all candidates studying abroad, who otherwise could have no preliminary examination, and to some who wish to continue their residence abroad a year after their preparation for admission to college is completed.

Three hundred and nineteen candidates for admission were examined, of whom two hundred and twenty-seven had passed a preliminary examination in a part of the requirements, twenty-eight took the whole examination at one time, and sixty-four were examined on the majority of the subjects in June, postponing the rest to the fall. Of the last, thirty-four completed the examination as they had proposed; nine, in consequence of serious failures in June, took the whole examination in the autumn; and twenty-one abandoned the attempt to pass this year, eight of them entering as Special Students.

The first table exhibits the results of the examinations in the several subjects compared with those of previous years.

1880. 236 candidates. 1881. 253 candidates. 1882. 315 candidates. 1883. 326 candidates. 1884. 307 candidates. 1885. 319 candidates.	PRESCRIBED SUBJECTS.										
	Caesar and Virgil.	Latin at Sight and Composition.	Xenophon or Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Plane Geometry.	Physics.	English Composition.	French or German.
Percentage failing in each study.											
1880	14	6	17	17	15	14	29	36	11	17	13
1881	8	6	12	13	15	14	25	27	7	10	18
1882	7	11	7	16	11	12	27	20	14	15	15
1883	10	4	11	17	9	7	32	16	14	14	25
1884	7	4	5	8	9	13	19	17	21	12	12
1885	6	8	6	11	9	6	27	23	21	15	14

	ELECTIVE SUBJECTS.									
	Cicero and Virgil.		Latin at Sight and Composition.	Herodotus.	Greek Composition.	Iliad.	Trigonometry.	Solid Geometry.	Elective Physics.	Chem. or Botany.
Percentage failing in each study.										
1880	14		22	12	33	14	39	48	18	9
1881	15		13	12	19	12	30	41	16	27
	Cicero.	Virgil and Ovid.	Comp.							
1882	13	11	29	10	19	9	45	27	17	13
1883	12	6	17	8	20	7	45	12	28	13
1884	18	12	23	15	16	8	27	22	50	13
1885	22	7	17	16	12	7	25	29	57	23

The number of candidates who in the last four years have presented themselves for examination in each of the four elective groups is shown in the following table: —

	1882.		1883.		1884.		1885.	
Whole number of candidates	315		326		307		319	
Number offering		Per ct.		Per ct.		Per ct.		Per ct.
Latin	294	93	303	93	293	95	306	96
Greek	246	78	254	78	247	80	265	83
Mathematics	56	18	50	15	59	19	55	17
Physical Science	77	24	83	25	46	15	47	15

Of these elective groups no candidate is required to offer more than two, but candidates are encouraged to offer one or both of the rest if they have had time and opportunity to do the work in a thorough manner. The following table shows, for the past four years, the number of candidates who offered each of the possible combinations of these groups: —

Number of candidates who offered	1882.	1883.	1884.	1885.
Latin, Greek, Mathematics, and Physical Science	6	7	4	2
Latin, Greek, and Mathematics	17	8	16	22
Latin, Greek, and Physical Science	11	12	6	4
Latin, Mathematics, and Physical Science	3	4	1	5
Greek, Mathematics, and Physical Science	. .	. .	. .	. .
Latin and Greek	204	216	213	237
Latin and Mathematics	12	15	24	13
Latin and Physical Science	41	41	29	23
Greek and Mathematics	5	4	8	. .
Greek and Physical Science	3	7	. .	. .
Mathematics and Physical Science	13	12	6	13
Total number of candidates	315	326	307	319

The striking fact revealed by the last two tables is the firm hold which the Classics and Mathematics still have on the secondary schools as far as these are represented by the candidates who come to this college. The proportion of candidates offering elective Latin and elective Greek has steadily increased for four years. The number offering both has grown from two hundred and thirty-eight in 1882 to two hundred and sixty-five in 1885, the whole number of candidates in the two years being almost the same. The number of candidates offering elective Mathematics is remarkably steadfast; and it is noticeable that in the last two years, of the candidates who presented Latin and Greek together with a third elective group, the great majority chose Mathematics. Physical Science for a time attracted about a quarter of the candidates; but when the requirement was made somewhat more difficult a year ago, it immediately lost its attractiveness for the indolent who had no interest in the subject, and the number of candidates presenting it dropped at once to a point slightly below that of Mathematics, where from present indications it appears likely to remain.

The next table presents the general results of the examinations during the five years in which the present requirements have been exclusively in use: —

	1881.	1882.	1883.	1884.	1885.
Candidates examined	253	315	326	307	319
" admitted	231	286	298	286	288
" " clear . .	99	116	121	142	129
" rejected	22	29	28	21	31
Per cent "	8.7	9.2	8.6	6.8	9.7

Of the two hundred and eighty-eight candidates admitted this year, two hundred and twenty-four entered the Freshman class in October. Two by passing further examinations gained admission to the Sophomore class. Of the remaining sixty-two, twenty-three have signified their purpose of coming in a subsequent year; eight have gone to other institutions; the rest have given no definite information as to their plans.

With the recent change in the work of the Freshman year, the reason for the rule restricting the preliminary examination to prescribed subjects disappeared, and the Faculty accordingly voted to allow a candidate to present himself in any subject, prescribed or elective. The whole number of candidates who took a preliminary examination this year was three hundred and three, five less than last year. Of these, two hundred and forty-eight, or two more than last year, received certificates of having passed in from five to thirteen subjects. The following tables exhibit the results of the examination in detail, with the corresponding statistics for previous years. The first table shows the proportion of candidates examined in each subject, with the proportion of failures in each.

Preliminary Examination. 1881, 266 candidates. 1882, 287 " 1883, 284 " 1884, 308 " 1885, 303 "	Caesar and Virgil.	Latin at Sight.	Xenophon or Greek Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Geometry.	Physics.	English.	French.	German.
Percentage of the whole number of candidates who were examined in each study.												
1881	88	86	78	79	76	97	82	46	74	61	54	5
1882	93	93	77	83	83	97	88	41	75	64	51	5
1883	93	92	76	81	84	98	91	49	81	66	51	9
1884	93	93	82	82	77	98	89	38	65	63	53	7
1885	93	94	81	83	83	99	89	39	57	67	64	10
Percentage of failure among those examined in each study.												
1881	15	19	28	24	22	21	35	41	17	19	17	14
1882	20	26	9	30	27	17	37	27	12	37	17	14
1883	6	14	15	24	15	15	53	19	13	28	28	8
1884	15	6	10	18	19	29	44	37	47	40	25	9
1885	12	25	10	19	15	9	42	29	40	25	29	10

The next table shows the general results of the examinations for four years.

Number of candidates who passed in	1882.	1883.	1884.	1885.
Five subjects	40	27	39	24
Six "	28	30	38	35
Seven "	46	60	57	51
Eight "	58	66	72	77
Nine "	33	29	23	24
Ten "	24	24	15	29
Eleven "	4	8	2	5
Twelve "	. .	. .	. .	2
Thirteen "	. .	. .	. .	1
Received certificates	233	244	246	248
Failed to pass in five subjects	54	40	62	55
Total number of candidates . .	287	284	308	303

In administering the discipline of the College, the Faculty was not called upon during the year to deal with any serious violations of good order. One Senior was suspended, and in consequence failed to graduate with his class, for taking into an examination-room notes on the subject of the examination; and a Freshman was suspended for copying in an examination. The probation of three Juniors, seven Sophomores, and four Freshmen, who still persisted in neglecting their studies, was closed. Four of these have been permitted to return this year and resume their work in a lower class. One Special Student was deprived of his privileges, because he did not appear to be making any proper use of them.

Early in the year the Faculty voted to recommend to the Corporation and Overseers the abrogation of that part of the statutes of the University which related to the attendance of undergraduates at church on Sundays. The rules in question had been in force since 1869, before which all undergraduates were required to attend public worship on Sunday, whether they spent the day in Cambridge or elsewhere. Since 1869 the College has assumed no responsibility for the attendance of students who obtained leave at the request of their parents or guardians to spend Sunday at home or with some designated family; but every student who remained in Cambridge was required to attend the morning service at Appleton Chapel or at some other place of worship selected by his father or guardian, or by himself if he was of age; except that the attendance of Seniors has since 1874 been left to their own discretion. During the fifteen years of the existence of this rule, the attendance of the students at Appleton Chapel gradually diminished, and more and more of them distributed themselves among the various churches of Cambridge and Boston until, on the retirement of Dr. Peabody in 1881, the Sunday morning service in the Chapel was discontinued. When the Sunday service thus ceased to be a living part of the college system, compulsory attendance lost its chief object, and its evils were aggravated by contrast with the other departments of college life in which the student had learned to do his duty without compulsion. There was, moreover, no practicable means of enforcing the rule except through the student's own report of his attendance, — a method open to grave objections. In short, the College was continuing to perform a function which it had undertaken under vastly different conditions, and for ends which cannot now be attained in the same way. When this point had been reached, it was wise to withdraw from a responsibility which could no longer be effectively exercised. The recommendation of the Faculty met with the approval of the Corporation and Overseers, and the regulations in question were rescinded accordingly. It was understood that seats should continue to be provided at the expense of the College, as heretofore, for all students who attend the Sunday services of the churches in the vicinity of the College.

On the recommendation of the Committee on Athletic Sports, the Faculty voted in January to prohibit the participation of our students in intercollegiate games of football. The committee had reached the conclusion as early as the fall of 1883, that the game as then played ought not to be permitted. But as the Intercollegiate Football Association undertook to reform the game by the adoption of more stringent rules, the committee decided to defer action until the experience of one more season should have shown what effect the revised rules were likely to have in improving the character of the game. They accordingly investigated the subject carefully during the fall of 1884, attending four of the principal contests of the season. They found the game essentially unchanged, and reported to the Faculty that "after deliberate investigation they had become convinced that the game of football as at present played by college teams is brutal, demoralizing to players and to spectators, and extremely dangerous"; and that they did not believe that at the present time, and with the prevailing spirit, any revision of the rules made by the Intercollegiate Association could be effective in removing these objectionable features. The Faculty voted in accordance with these facts. This temporary prohibition has by no means killed the interest in the game. The class contests of the present season have been attended with the double advantage of attracting a much larger number of students to a sport which could be engaged in by gentlemen without loss of self-respect.

Owing to the retirement of Professors J. W. White and Byerly, who have leave of absence this year, it became necessary to reconstitute the Committee on Athletic Sports; and at the instance of the retiring committee it was constituted on a new plan. The committee is to consist of five members: the Director of the Gymnasium, a physician resident in Boston or Cambridge, a graduate of the College interested in athletic sports, and two undergraduates from among the leaders in athletic sports. The committee is to be appointed by the President for one year, is to report to the Faculty at the first meeting in January, and on questions involving general principles is to consult the Faculty before communicating its decisions to the students.

The Committee of Conference was also reorganized on a new basis for the present year, and now consists of five members of the Faculty and sixteen students. The former are to be appointed by the President at the beginning of each academic year, and their chairman is to be chairman of the whole committee. The student members are to be five Seniors, four Juniors, and three Sophomores, elected by their respective classes by ballot in the second week of the year; two Freshmen, elected by their class by ballot in the second week after the Christmas recess; and two members at large, elected by the whole committee at the first meeting of the year. Subjects for discussion may be proposed by either Faculty members or students, those proposed by the former as a body to have precedence. Resolutions passed by a majority of the student members are to be reported to the Faculty, and the action of the Faculty thereon reported back by the chairman of the committee.

The instruction given in the College in the year 1884–85 is set forth in detail in the tables on the following pages, which contain a statement of the work done in each course, the names of the instructors, the number of hours a week of instruction, and the number of students of various classes and departments,* as well as the total number of students in regular attendance. To furnish a complete view of the scheme of instruction, all the courses are included in the list, — those omitted for the year as well as those actually given. Of the omitted courses, those which were not offered are distinguished by a bracket ([ ) ; the rest were withdrawn when it appeared that they had not been taken by a sufficient number of competent students. A star (*) indicates that a course could be taken only with the previous consent of the instructor. The appearance of Rhetoric in two places among the prescribed studies is due to its being transferred to the Freshman year and the consequent necessity of teaching it for one year to both Sophomores and Freshmen.

In addition to the elective course in Elocution (English 9), instruction in that study was given to voluntary classes. Forty-one members of the three upper classes met Mr. Jones once a week throughout the year, and seventy Freshmen till Christmas. Instruction in Reading was given by Mr. Cummings to voluntary classes, which met twice a week from December to May. Thirty-three students — chiefly Freshmen — attended this instruction at the start, and about two thirds of them persevered to the end. Evening Readings were given as heretofore, and embraced the following selections: The Clouds of Aristophanes (two evenings), by Professor Goodwin; the Hecuba of Euripides (two evenings), by Professor Dyer; Molière's Les Précieuses Ridicules (one evening), by Professor Böcher; Halévy's Un Mariage d'Amour (one evening), by Mr. Cohn; selections from Chaucer's Canterbury Tales (seven evenings), by Mr. Briggs.

The amount and quality of the work done last year by Special Students is exhibited in the following table. Twelve of these students withdrew during the year without completing any of their courses of study. Of the fifty-nine who took the required examinations in at least one study, only twenty-six persevered to the end in all the studies which they had undertaken. Twenty-seven persevered in four of more courses, thirty-six in three or more. Only twenty-nine passed successfully in all the studies which they completed. In the table, the numbers in the first column stand for students; those in the second, third, and fifth columns represent amounts of work, estimated as in the case of undergraduates, the unit being a full elective course or a prescribed course having three exercises a week. A year's work for an undergraduate varies from 5.3 in the Freshman, to 4.2 in the Senior, year.

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* To designate the various kinds of students in the several courses, the following abbreviations are used: Se. for Senior, Ju. for Junior, So. for Sophomore, Fr. for Freshman, Sp., for Special Student, Sc. for Scientific Student, Gr. for Graduate Student, Di. for Divinity Student, Law for Law Student, Me. for Medical Student, Ve. for Student in Veterinary Medicine, and Bu. for Student of the Bussey Institution.

Students.	Number of courses taken.	Number of courses completed.	Average per cent.	Number of courses in which the student failed.	Students.	Number of courses taken.	Number of courses completed.	Average per cent.	Number of courses in which the student failed.
1	3.2	.2	96		31	2.5	2.5	59	
2	1.	1.	93		32	4.	4.	59	
3	3.2	3.2	87		33	5.4	5.4	59	.5
4	7.	6.	84		34	6.2	6.2	56	.2
5	5.7	5.7	84		35	5.2	.7	55	.2
6	2.	1.	80		36	4.5	4.	54	1.
7	4.5	4.5	79		37	5.4	3.4	54	1.
8	6.2	5.5	79		38	5.4	3.4	54	1.
9	6.	6.	79		39	4.	2.	54	1.
10	4.5	4.5	78		40	5.4	5.4	53	1.
11	5.2	1.2	78		41	3.	3.	52	
12	5.	5.	77		42	6.	5.	50	
13	5.	4.5	76		43	2.4	1.4	49	.2
14	5.4	4.4	75	.2	44	5.	3.	45	1.
15	5.9	5.9	72		45	4.2	2.2	45	1.2
16	3.5	3.5	71		46	5.4	1.2	45	
17	6.2	6.2	69		47	6.5	4.5	42	2.5
18	2.	2.	68		48	5.2	1.2	42	.2
19	5.	5.	65		49	4.	4.	40	1.5
20	5.	2.	65		50	5.4	4.4	39	2.2
21	5.4	5.4	65		51	4.	1.	37	1.
22	6.4	6.4	64	1.	52	4.2	1.2	36	1.2
23	5.4	5.4	63	1.	53	1.9	1.9	36	1.2
24	5.	4.5	62	1.	54	2.9	2.4	35	2.
25	4.9	4.9	62	1.	55	3.4	1.2	35	1.2
26	3.2	3.2	61		56	4.2	2.2	33	2.
27	5.4	5.4	60	1.	57	4.	3.5	30	1.
28	4.	3.	60		58	.4	.2	20	.2
29	3.5	1.5	60		59	2.2	1.2	16	1.2
30	3.5	1.5	60						

PRESCRIBED STUDIES.

Instructors.	Courses of Instruction.	Hours per week.	Students.	Total number of Students.
	FRESHMAN STUDIES.			
Mr. Briggs	1. English. — Rhetoric (Hill's Principles, with Lectures). — Written Exercises (once a week). — Lectures (read from Professor Hill's MSS.) on certain Authors considered as Masters of English Style	3	246 Fr., 25 Sp., 2 Sc.	273
	2. German or French (the one not offered by the student for admission) :—			
Prof. Bartlett and Mr. Lutz	German. — Sheldon's Grammar. — Deutsch's Reader. — Zschokke (Der zerbrochene Krug). — Heyse (L'Arrabbiata; das Mädchen von Treppi). — For private reading: Heyse (Die Blinden). — Writing of easy stories, after hearing them told by the Instructor	3	3 So., 151 Fr., 18 Sp., 5 Sc.	177
Mr. Métivier	French. — Chardenal's French Course, Part I. — Bôcher's Reader. — Labiche (La Poudre aux Yeux). — Erckmann-Chartrian (Madame Thérèse). — George Sand (La Marc au Diable). — Translation at sight	3	2 Se., 35 Fr., 10 Sp., 2 Sc.	49
Prof. Cooke	3. Chemistry. — Lectures in Elementary Chemistry	1 1st half-year	2 Se., 6 Ju., 5 So., 242 Fr., 26 Sp., 2 Sc.	283
Prof. Lovering	4. Physics. — Lectures on Electricity, Magnetism, Electro-Magnetism, and Magneto-Electricity	1 2d half-year	4 Se., 10 Ju., 15 So., 234 Fr., 18 Sp., 4 Sc.	285
	SOPHOMORE STUDIES.			
Mr. Wendell	1. Rhetoric. — Lectures, based on Hill's Principles of Rhetoric. — Lectures (read from Professor Hill's MSS.) on Sterne, Goldsmith, Irving, Scott, Miss Austen, Webster, Carlyle, and Emerson	2	4 Ju., 233 So., 2 Fr., 6 Sp., 2 Sc.	247
Mr. Clymer	2. Themes. — Six Themes, corrected and rewritten		6 Ju., 251 So., 5 Fr., 7 Sp., 1 Sc.	270

	JUNIOR STUDIES.			
Mr. Clymer	1. THEMES. — Six Themes, corrected and rewritten		4 Se., 211 Ju., 4 So., 2 Sp.	221
Dr. Royce and Mr. Gates	2. (*a*) FORENSICS. — Six introductory Lectures on Argumentative Composition. — One Forensic and one Thesis in forensic form were written by each student and criticised and marked by the Instructors, who also gave opportunities for consultation at appointed hours. The Examination consisted of the writing of a Forensic on a subject selected by the Instructor from a list of four subjects presented by the student		8 Se., 224 Ju.	232
	(*b*) Theses, substituted for one or more Forensics by		4	4
	SENIOR STUDIES.			
	(*a*) FORENSICS. A course similar to that of the Junior year		174 Se.	174
	(*b*) Theses or Commencement Parts substituted for one or more Forensics by		28 Se.	28
	ELECTIVE STUDIES.			
	SEMITIC LANGUAGES.			
Prof. Lyon	1. Hebrew. — Davidson's Grammar. — Explanation of parts of the Old Testament (Genesis I.-III.; Deuteronomy IV.-XIII.; 1 Kings X.-XVI., and ten Psalms). — Practice in translating spoken Hebrew	3	4 Se., 1 Ju., 1 Fr., 3 Di.	9
Prof. Toy	2. Hebrew (Second Course). — Critical study of parts of the Hebrew Bible (nine chapters in Deuteronomy, twenty-eight in Isaiah, all of Haggai, Zechariah, Malachi, Joel and Ecclesiastes, and the Korah and Asaf psalms). — In addition each member of the class worked on a special piece of text-criticism	2	3 Di.	3

ELECTIVE STUDIES. — CONTINUED.

Prof. Lyon	3. Aramaic (Jewish and Classical). — Grammars of Nöldeke and Riggs. — Brown's Aramaic Method. — Rödiger's Chrestomathia. — Interpretation of selections from the Peshitto and the Targums, and from Daniel and Ezra	2	1 Se., 1 Gr., 2 Di.	4
Prof. Lyon	4. Assyrian. — Grammar (Lectures) with practice in writing. — Delitzsch's Lesestücke (2d ed.) with other selected texts and inscriptions	2	1 Se., 3 Gr., 2 Di.	6
Prof. Lyon	5. Assyrian (Second Course)		Omitted in 1884–85.	
Prof. Lyon	6. History of the Babylonian-Assyrian Religion. — Discussion of the doctrine in regard to God, sin and expiation, ethics, rewards and punishments	1 till Apr. 16	1 Gr., 9 Di.	10
Prof. Toy	7. Arabic. — Wright's Grammar and Reading-book. — The Thousand and One Nights	2	1 Se., 2 Ju.	3
Prof. Toy	8. Arabic (Second Course). — Interpretation of parts of the Muallakāt, Mutanabbi, and the Kurān	2	Omitted in 1884–85.	
Prof. Toy	9. Ethiopic. — Dillmann's Grammar and Chrestomathy	1	Omitted in 1884–85.	
Profs. Toy and Lyon	SEMITIC SEMINARY. — Papers were presented on the following subjects: The eschatology of the Koran; modern Moslem idea of the future life; pneumatology of the Koran; Sheol in the Old Testament; demonology of the Old Testament; angelology of the Old Testament; eschatology of the Jewish Apocrypha; influence of Persian ideas on Jewish; modern Jewish idea of the future life	Twice a month	1 Se., 2 Ju., 2 So., 1 Fr., 6 Di.	12
	INDO-IRANIAN LANGUAGES.			
Prof. Lanman	1. Elementary Sanskrit. — Whitney's Grammar. — Lanman's Reader (Nala, Fables from the Hitopadeça). — Bühler's Leitfaden (simple prose composition). — Exercises in translating Sanskrit at sight	3	3 Se., 1 Ju., 1 So.	5
Prof. Lanman	2. Sanskrit (Advanced Course). — Tales from the Kathā-sarit-sāgara. — Hymns of the Rigveda. — Selections from the Brahmanas. — Chapters from the Sutras (Wedding Ceremonial and Burial Service). — Exercises in writing Sanskrit	3	3 Gr.	3

Prof. Lanman	3. Sanskrit (course for rapid reading). — Böhtlingk'	2	Omitted in 1884–85.	
Prof. Lanman	[4. Old Iranian. — Bartholomae's Handbook, selectio	2	Omitted in 1884–85.	
Prof. Lanman	5. Pāli. — Frankfurter's Handbook. — Reading of se	2	Omitted in 1884–85.	
	GREEK.			
Mr. Parker	*A.* (Corresponding to the elective Greek of the exan Herodotus (in Goodwin's Greek Reader), with (and History. — Selections from Iliad, I.–XII.	3	1 So., 10 Fr., 3 Sp.	14
Prof. Croswell	*B.* Lysias (six orations), with lectures on History and Histories of Greece. — Goodwin's Moods and Te frequent references). — Homer's Odyssey (Books Essay on Epic Dialect. — Plato (Apology), wit and the Sophists. — Grote's History, chapters L Composition	3	2 So., 46 Fr., 3 Sp.	51
Profs. Croswell and Dyer	*C.* The same as Course *B*, except that the reading 1000 vss.) was substituted for Composition	3	40 Fr.	40
Prof. Croswell	*D.* Demosthenes (Olynthiacs I.–III.; Philippic I.). Xenophon's Hellenica. — Thackeray's Anthologia — Jebb's Primer of Greek Literature	3	10 Fr.	10
Prof. Dyer	*E.* Lucian (six Dialogues). — Aristophanes (Cloud (Euthyphro; Crito). — Euripides (Iphigenia in T of the Antonines. — Shakspere's Timon. — Jebb's (extracts). — Goodwin's Moods and Tenses	3	2 So., 9 Fr.	11
Prof. Croswell	1. Demosthenes (Philippics I.–III.). — Aeschylus (P phanes (Acharnians). — Theocritus (selected Idy mistocles)	3	3 Se., 5 Ju., 23 So.	31
Prof. J. W. White	2. Thucydides (Book VI.). — Aristophanes (Birds). Tyrannus). — Euripides (Medea)	3	1 Se., 7 Ju., 45 So., 3 Fr., 1 Gr.	57

ERRATUM.

Greek *B* was given by Professors Croswell and Dyer, and the number of students was: 2 So., 90 Fr., 4 Sp.; total, 96.

ELECTIVE STUDIES. — CONTINUED.

Prof. Croswell	3. Composition. — Sidgwick's Greek Prose Composition, Part III. — Written translations from Greek into English	1	24 So., 1 Fr., 1 Sp.	26
Prof. J. W. White	5. Euripides (Cyclops; Alcestis). — Aristophanes (Peace). — Sophocles (Trachiniae). — Herodotus (Books V., IX.)	3	10 Se., 16 Ju., 17 So., 1 Sp.	44
Prof. Dyer	6. Composition (Second Course). — Sidgwick's Composition, Part IV. — Written translations from Greek into English. — Sargent and Dallin's Materials and Models (Philosophical)	1	7 Se., 6 Ju., 1 So., 1 Gr.	15
Prof. Dyer	7. Plato (Protagoras). — Isocrates (Panegyricus). — Demosthenes (On the Crown). — Æschines (Against Ctesiphon). — Lectures on History and Attic Law. — Grote's History of Greece (chapters LXXIII.-LXXX., LXXXVI.-XC., XCIV., XCV.)	3	1 Se., 4 Ju., 1 So.	6
Prof. Goodwin	8. Plato (Republic, the greater part, including parts of each book). — Grote's Plato (parts of Vols. I. and III.), with Lectures on the philosophy of Plato and Aristotle. — Aristotle (Ethics, Books I.-IV. and X.)	3	10 Se., 6 Ju., 2 Gr.	18
Prof. Goodwin	9. Aeschylus (Seven against Thebes). — Sophocles (Antigone and Electra). — Aristophanes (Frogs). — Aristotle (De Arte Poetica)	3	9 Se., 7 Ju., 2 Gr.	18
Prof. J. W. White	10. The Life of the Ancient Athenians. Seventy Lectures; fifteen hours of illustration with the stereopticon	3	23 Se., 18 Ju., 7 So., 1 Sp., 2 Gr.	51
Prof. Allen	11. Lectures on the History of Greek Literature, with direction of the students' private reading	3	3 Se., 6 Gr.	9
Prof. Goodwin	[*12. The Political and Legal Antiquities of Athens	1	Omitted in 1884–85.	
Prof. Goodwin	13. Plato (parts of the Phaedrus). — Aristotle (Metaphysics, Book I.; Politics, Book I. and parts of II. and III.). — Ritter and Preller's Historia Philosophiae (140 pages). — Zeller's History of Greek Philosophy, I. and II. (English translation)	2	1 Se., 1 Gr.	2
Prof. Goodwin	*14. Studies in Greek History, with especial reference to Topography	1	Omitted in 1884–85.	

LATIN.

Mr. Preble	*A.* (Corresponding to the elective Latin of the examination for admission.) Cicero (Cato Maior; six and a half orations). — Valerius Maximus (Selections). — Virgil (Georgics, Books I., II.)	3	1 Ju., 1 So., 6 Fr., 5 Sp.	13
Prof. Smith and Mr. Preble	*B.* Horace (Odes, Books I.-III.). — Cicero (De Divinatione, selections). — Livy (selections from Books I.-V.). — Translation into Latin. — Reading at sight	3	75 Fr., 6 Sp.	81
Prof. Greenough and Mr. Parker	*C.* Horace (selections from the Odes), with study of Horace's life and times. — Cicero (De Amicitia), with practice in reading Latin without translation. — Livy (Books XXI., XXII.), with study of Hannibal's early campaigns and of the subjunctive mood	3	81 Fr., 4 Sp.	85
Mr. Parker	*D.* Literary study of Virgil (Aeneid, Book VI.). — Cicero (De Officiis, part of Book I.). — Velleius Paterculus (Book II.). — Sketch of Roman History from the Kings to the reign of Tiberius	3	1 Ju., 3 So., 28 Fr., 1 Sp.	33
Prof. Smith	1. Terence (Phormio; Andria; Heautontimorumenos, Acts I., II.). — Cicero (selected Letters). — Tacitus (Agricola). — Horace (selected Satires and Epistles). — Reading at sight	3	1 Se., 36 So., 3 Fr.	40
Mr. Preble	2. (*a*) *First half-year.* Sallust (Jugurtha). — Cicero (Tusculan Disputations, Books I., II., V.). — De Deorum Natura, Books I., III. — Catullus (Marriage of Peleus). — Written translations. — Reading at sight	3	6 Se., 8 Ju., 36 So., 3 Fr., 1 Sp.	54
Prof. Greenough	(*b*) *Second half-year.* Livy (Books XLII.-XLIV.). — Cicero (Philippics, I., II.). — Reading at sight	3	7 Se., 10 Jr., 51 So., 2 Fr., 2 Sp.	72
Mr. Parker	3. Composition (First Course). — Translation of English selections into Latin, with criticisms in class and privately. — One original composition in Latin	1	1 Ju., 24 So., 1 Fr., 1 Sp.	27
Prof. Greenough	5. Cicero (De Finibus, Books I., III.; in Verrem, I., II. I.-III.). — Tacitus (Annals, Books VI., XI.-XVI.)	3	1 Se., 5 Ju., 3 So., 1 Sp.	10
Prof. Lane	6. Tacitus (selections from the Annals). — Pliny (selected Letters)	3	1 Se., 13 Ju., 1 Fr.	15

ELECTIVE STUDIES. — CONTINUED.

Mr. Preble	7. Composition (Second Course). — Exercises from Preble and Parker's Handbook. — Selections from Xenophon and Plato translated into Latin. — Practice in speaking Latin	1	7 Ju., 1 So.	8
Prof. Lane	8. Lucretius (Selections). — Plautus (Bacchides, Curculio, Pseudulus)	3	7 Se., 1 Ju., 1 So., 1 Gr.	10
Mr. Preble	9. Preble and Parker's Handbook. — One original composition in Latin	1	5 Se., 1 Gr.	6
Prof. Greenough	[*10. The Private Life of the Romans, chiefly as illustrated by works of art	2	Omitted in 1884–85.	
Prof. Allen	*11. Critical Study of selections from Ovid's Tristia and Ex Ponto. — Lectures and Discussions	1	1 Se., 3 Gr.	4
Prof. Lane	*12. Latin Grammar. — Quintilian. — Gellius. — Inscriptions	2	Omitted in 1884–85.	
	GREEK AND LATIN.			
Prof. Greenough	*1. Greek and Latin Etymology, with special study of the Indo-European vowel system. — Schleicher's Comparative Grammar (Morphology). — Selections from Curtius's Greek Etymology. — Lectures	3	1 Gr.	1
Profs. Allen and Smith	*2. Practice in Text-Criticism and Interpretation. — Critical Study of a part of the Alcestis of Euripides and a part of the Agricola of Tacitus. — Discussions, conducted wholly in Latin	3	3 Gr.	3
Prof. Greenough	3. History of the later Greek Philosophy (the Stoics, Epicureans, and Skeptics)		Omitted in 1884–85.	
	ENGLISH.			
Prof. Child	1. Chaucer (Canterbury Tales; Parliament of Fowls; Legend of Good Women)	3	2 Se., 13 Ju., 3 So., 1 Gr.	19
Prof. Child	[11. Bacon and Milton	3	Omitted in 1884–85.	
Prof. Child	2. Shakspere (King Lear; Henry IV., Parts I., II.; Julius Caesar; All's Well that Ends Well; Macbeth; The Tempest). — Dowden's Shakspere Primer	3	26 Se., 32 Ju., 17 So., 1 Fr., 4 Sp., 5 Gr.	85
Prof. Child	3. Sweet's Anglo-Saxon Reader. — Beówulf. — Cædmon (Exodus; Daniel)	3	2 Se., 1 Ju., 2 Gr.	5

Prof. Child	[4. Early English. — Mätzner's Altenglische Sprachproben	3	Omitted in 1884–85.	
Mr. Wendell	12. English Composition. — Each student wrote fourteen regular themes during the year, and was further required to present every day to the Instructor a brief theme on a topic chosen by himself. Themes of both kinds were criticised by the Instructor, and in part by the students for one an other, and were read and discussed in class	1½	29 Se., 38 Ju., 1 So., 1 Sp.	69
Mr. Wendell	5. English Composition (Advanced Course). — Twelve regular themes, of which six were criticised by the class for one another as well as by the Instructor. The subjects of most of these themes were drawn by the students from personal reading in the works of some author suggested by the Instructor. The following authors were read: — Shakspere, De Quincy, Thackeray, Boswell. — One long theme, prepared with great care, and equivalent to four regular themes. — Reading and discussion of themes in class-room	1½	14 Se., 8 Ju., 1 So., 6 Gr.	29
Dr. Royce	*6. Oral Discussion. — Fortnightly debates, in each of which six members of the class took part as principal disputants, and the remainder as minor disputants. An hour was given to criticism by the Instructor. Students were invited to hand to the Instructor for his assistance written criticisms on one another's work	3 a fortnight	22 Se., 2 Ju.	24
Profs. Child and Palmer	7. English Literature of the Eighteenth Century	1	14 Se., 38 Ju., 48 So., 2 Fr., 4 Sp.	106
Prof. A. S. Hill	[8. English Literature of the Nineteenth Century		Omitted in 1884–85.	
Mr. Jones	*9. Elocution. — Lectures. — Russell's Vocal Culture. — Bacon's Manual of Gesture. — Burke. — Webster. — Longfellow (Hiawatha). — Shakspere (As You Like It)	2	9 Se., 6 Ju., 11 So., 1 Gr.	27
	GERMAN.			
Dr. Francke	1. Writers of the Nineteenth Century.—Grimm (Die Venus von Milo; Rafael; Michelangelo). — Goethe (selections from Dichtung und Wahrheit and Italienische Reise). — Buchheim's Deutsche Lyrik. — Composition	3	2 Se., 12 Ju., 59 So., 11 Fr., 3 Sp., 4 Sc.	91

ELECTIVE STUDIES. — CONTINUED.

Prof. Bartlett	2. Selections in History and Biography. — Knochenhauer (Geschichte der Neueren Zeit). — Der Neue Plutarch: Vol. 2, Gottschall's Life of Robespierre; Vol. 10, Kugler's Life of Wallenstein. — Practice in writing German	3	4 Se., 4 Ju., 73 So., 4 Fr., 4 Sp., 1 Gr.	90
Dr. Francke	3. German Literature of the Eighteenth Century (First Course). — Lessing (Minna von Barnhelm; Emilia Galotti; Nathan der Weise). — Wieland (Oberon). — Herder (Cid). — Schiller (Räuber). — Goethe (Leiden des jungen Werthers; Dichtung und Wahrheit, Books I.-XI.) — The course was conducted in German	3	3 Se., 20 Ju., 4 So., 7 Fr.	34
Prof. Bartlett	5. German Literature of the Eighteenth Century (Advanced Course). — Goethe (Götz von Berlichingen; Egmont; Iphigenie; Faust). — Schiller (Fiesco; Maria Stuart; Wallenstein; Das Lied von der Glocke). — The Lyrics and Ballads of Goethe, Schiller, Uhland, Chamisso, Bürger. — The Literary Histories of Koberstein and Scherer. — Düntzer's Commentaries. — Gottschall's "Schiller's Leben." — Theses (in German). — The course was conducted in German	3	15 Se., 10 Ju., 5 So., 2 Fr., 2 Sp.	34
Dr. Francke	6. History of German Literature and Art from the Crusades to the Reformation. — Lectures. — The course was conducted in German	3	1 Ju., 2 So., 3 Fr.	6
Prof. Sheldon	7. German Literature before Luther. — Hartmann von Aue (Der arme Heinrich). — Nibelungenlied. — Walther von der Vogelweide (selections). — Additional reading done by students alone, about six thousand lines each, and reported on in Theses	3	2 Se., 1 Ju.	3
Prof. Sheldon	8. Introduction to Germanic Philology. — Phonetics. — Gothic. — Old High German		Omitted in 1884–85.	

	FRENCH.			
Mr. Cohn	1. Dumas (Le Capitaine Pamphile). — Halévy (L'Abbé Constantin). — Stahl (Maroussia). — George Sand (Marianne). — Sandeau (Mademoiselle de la Seiglière). — Belot et Villetard (Le Testament de César Girodot). — Augier et Sandeau (Le Gendre de M. Poirier). — Roulier's Second Book of French Composition (105 pages)	3	4 Se., 13 Ju., 64 So., 36 Fr., 5 Sp.	122
Prof. Bôcher	2. La Fontaine (Fables). — Taine (La Fontaine et ses fables). — Voltaire (Théâtre choisi). — La Bruyère (Les Caractères). — Mme. de Sévigné (Lettres choisies). — Voltaire (Siècle de Louis XIV.). — Sainte-Beuve (Portraits littéraires, Vol. I.). — Brachet's Grammaire historique	3	3 Se., 7 Ju., 12 So., 25 Fr., 3 Sp.	50
Prof. Bôcher	3. Molière (Œuvres, 3 vols.). — Racine (six plays). — Corneille (seven plays). — Boileau (Art poétique; épîtres; satires). — Regnard (four plays). — Sedaine (one play). — Marivaux (one play). — L'Avocat Pathelin. — Fleury's Histoire de la littérature française	3	4 Se., 17 Ju., 6 So., 2 Fr.	29
Mr. Cohn	4. Littérature française au XVIII^e siècle. — Voltaire (Zaïre; Zadig; L'Essai sur les mœurs). — Rousseau (Lettre sur les spectacles; Contrat Social). — Montesquieu (Lettres Persanes; Esprit des Lois). — Diderot (Paradoxe sur le Comédien). — D'Alembert (Discours Préliminaire de l'Encyclopédie). — Le Sage (Turcaret). — Marivaux (Le Legs; les Fausses Confidences). — Beaumarchais (Barbier de Séville; Mariage de Figaro). — Mirabeau (Discours sur la Banqueroute). — Lectures. — Four themes	3	2 Se., 4 Ju., 4 So., 2 Fr., 1 Sp.	13
Prof. Bôcher	[5. Littérature française au XV^e et au XVI^e siècle	2	Omitted in 1884–85.	
Mr. Cohn	6. Littérature française jusqu'au XV^e siècle. — Aubertin (Choix de Textes de l'ancien français). — Chanson de Roland. — Joinville (Histoire de Saint-Louis). — Lectures. — Three themes	2	1 Ju., 2 So., 1 Sc.	4

ELECTIVE STUDIES. — CONTINUED.

Prof. Sheldon	11. Romance Philology. — Comparative Phonology and Inflexions of the chief Romance languages, based on Diez's Grammaire des langues romanes. Each student had also at least one special subject assigned him, involving the reading of a text in some one of the languages discussed, and the study of its forms	2	3 Se., 1 Ju.	3
Prof. Sheldon	[7. Old French. — Phonology and Inflexions. — Reading of selected texts	2	Omitted in 1884–85.	
Prof. Bôcher	8. Translation at sight. — Chazel (Le Chalet des sapins). — George Sand (Le Marquis de Villemer). — Cherbuliez (Le Comte Kostia). — Victor Hugo (Ruy Blas). — Ohnet (Le Maître de forges). — Selections from Dumas, Guizot, Daudet, Gautier, Victor Hugo	2	22 Se., 43 Ju., 64 So., 34 Fr., 6 Sp., 2 Sc.	171
Mr. Métivier	9. French Composition and Conversation. — Chardenal's French Course (Part II.). — Dictation exercises, with written summaries in French. — Written narratives based on Crane and Brun's Tableaux de la Révolution française	2	7 Se., 6 Ju., 5 So., 8 Fr.	26
Mr. Cohn	10. French Composition and Conversation (Advanced Course). — Maurice Block (La France; Le Département; La Commune). — V. Guichard (Le Code Civil). — About thirty essays were written	2	3 Se., 3 Ju., 1 So.	7
	ITALIAN.			
Prof. Sheldon	1. Toscani's Grammar. — Salvatore Farina (Racconti e Scene, about 130 pages). — Manzoni (most of I Promessi Sposi). — Translation of easy English into Italian	3	9 Se., 9 Ju., 6 So., 1 Sp.	25
Prof. Sheldon	2. Gherardi del Testa (six plays). — Ariosto (Orlando Furioso). — Tasso (Gerusalemme Liberata). — Translation from English into Italian	3	3 Se., 3 Ju., 2 So.	8
Prof. Nash	*3. Selections from Boccaccio, Petrarca, Dante, etc.	3	Omitted in 1884–85.	
Prof. Norton	[*4. Dante	2	Omitted in 1884–85.	

	SPANISH.			
Prof. Nash	1. Josse's Grammar. — Gil Blas. — El Eco de Madrid. — Reading at sight. — Composition and Conversation	3	13 Se., 7 Ju., 17 So.	37
Prof. Nash	2. Modern Spanish Literature. — Hartzenbusch (La Coja y el encogido; Juan de las Viñas). — Breton de los Herreros (Marcela). — Moratin (La Comedia Nueva; El Sí de las Niñas; El Viejo y la Niña). — Biographies and literary essays. — Syntax and Composition. — Reading at sight	3	4 Se., 2 Ju., 1 So., 1 Sc.	8
Prof. Nash	*3. Calderon (El Magico Prodigioso; El Principe Constante). — Lope da Vega (La Estrella de Sevilla). — Cervantes (Don Quijote, selections). — El Poema del Cid (selections). — History of the Spanish Language and Literature (Lectures and Reading). — Composition	3	3 Se.	3
	PHILOSOPHY.			
Prof. Palmer	1. Logic and Metaphysics. — Sidgwick on Fallacies. — Ferrier's Lectures on Greek Philosophy	3	4 Se., 33 Ju., 22 So., 4 Sp.	63
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Prof. James	3. The Philosophy of Evolution. — Spencer's First Principles and Data of Ethics	3 2d half-year	15 Se., 15 Ju., 18 So., 2 Fr., 4 Sp., 1 Gr.	55
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Prof. Palmer	*8. Hegel's Logic or Rechtsphilosophie	2	Omitted in 1884–85.	
Prof. James	*9. Psychology (Advanced Course)	2	1 Gr.	1

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Prof. Peabody	10. The Philosophy of Religion. — Caird's Philosophy of Religion. — Smyth's The Religious Sentiment. — Lectures	1	3 Se., 4 Ju., 9 Di.	16
Prof. Peabody	11. The Practical Ethics of Modern Society. — Lectures. — Six Essays by each student. Subjects: Charity (each student has visited and made report on some Institution of Charity), Divorce, The Indian Question, The Ethics of Labor, Temperance, Reform	1	26 Se., 9 Ju., 1 So., 1 Sp., 2 Gr., 1 Law, 7 Di., 1 Sc.	48
Dr. Royce	12. Philosophical Theism, with a critical study of some of the chief philosophical controversies about the being and nature of God. — Lectures. — Thesis	3 1st half-year	12 Se., 2 Ju.	14
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Profs. Dunbar and Laughlin	1. Laughlin's Mill's Principles of Political Economy. — Lectures on the Financial Legislation of the United States	3	18 Se., 75 Ju., 61 So., 7 Sp., 4 Law, 1 Sc.	166
Prof. Dunbar	2. History of Economic Theory. — Selections from Leading Writers	3	10 Se., 8 Ju., 3 Sp.	21
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	HISTORY.			
Prof. Macvane	1. Mediaeval and Modern European History (introductory to Courses 7, 8, 9, 10, and 11)	2	5 Se., 21 Ju., 69 So., 84 Fr., 14 Sp., 2 Sc.	195
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Prof. Gurney	3. Roman History to the Fall of the Republic, with especial reference to the Development of Political Institutions in Greece and Rome	2	1 Se., 6 Ju., 4 So., 3 Gr., 1 Sp.	15
Prof. Gurney	[4. Later Roman and Early Mediaeval History (from Augustus to Charlemagne), with especial reference to Institutions	2 or 3	Omitted in 1884–85.	
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Prof. Young	[*6. The Legal Institutions of the Franks and the Anglo-Saxons	2	Omitted in 1884–85.	
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Prof. Macvane	11. European History during the Seventeenth Century and the first half of the Eighteenth	3	42 Se., 59 Ju., 5 So., 1 Fr., 2 Sp., 1 Gr.	110
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Prof. Gurney	[3. The Law of Inheritance	3 a fortnight.	Omitted in 1884–85.	
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Mr. Moore	2. Principles of Design in Painting, Sculpture, and Architecture. — Ruskin's Stones of Venice and Seven Lamps of Architecture. — Sir Joshua Reynold's Discourses. — Taine's Ideal in Art. — Cheneau's La Peinture Anglaise. — Lectures (once a week). — Practice in Drawing (four hours a week)	2	1 Se., 3 Ju., 1 So., 1 Sp.	6
Prof. Norton	[3. Ancient Art	3	Omitted in 1884–85.	
Prof. Norton	[4. Florentine Art	3 1st half-year	Omitted in 1884–85.	
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Mr. Moore	9. The Arts of the Middle Ages and the Renaissance. — Lectures, with collateral reading	1	13 Se., 11 Ju., 4 So., 1 Gr., 1 Law	30
	MUSIC.			
Prof. Paine	1. Harmony. — Richter's Harmony. — Written exercises on figured basses. — Practice in harmonizing given melodies. — Elements of Counterpoint	3	3 Se., 1 Ju., 9 So., 2 Fr., 1 Sp.	16
Prof. Paine	2. Counterpoint. — Richter's Counterpoint. — Written exercises on given themes	3	1 Se., 3 Ju.	4
Prof. Paine	3. History of Music. — Lectures, with instrumental illustrations. — Collateral reading	3	32 Se., 37 Ju., 10 So., 1 Sp., 1 Sc.	81
Prof. Paine	4. The Instrumental Music of Haydn, Mozart, Beethoven, and their successors. — Pauer's Musical Forms. — Lectures	1	2 Ju., 2 So.	4
Prof. Paine	*5. Canon and Fugue. — Richter's Canon and Fugue. — Practice in Composition	3	2 Se., 1 Ju.	3
Prof. Paine	*6. Free Thematic Music. — Composition of free instrumental forms, as represented by the Nocturne, Minuet, Scherzo, Song without words, etc., and finally a complete Piano Sonata	2	2 Se., 1 Ju.	3
	MATHEMATICS.			
Prof. C. J. White	*A.* Plane Trigonometry, with its applications to Surveying and Navigation. — Logarithms. — Analyitic Geometry	3	64 Fr., 6 Sp., 1 Sc.	71
Prof. Byerly	*C.* Advanced Course in Analytic Geometry, Plane and Solid. — Lectures with printed Syllabus	3	1 Se., 14 Fr., 2 Sp., 1 Sc.	18
Mr. A. C. Lane	*D.* Algebra (Todhunter, Chapters 16–36, 41, 46, 53). — Theory of Equations (Prof. Byerly's Syllabus to § 18, §§ 25, 26). — Lectures and collateral reading	1 in 1st half-year, 2 in 2d	32 Fr., 2 Sp., 1 Sc.	35

ELECTIVE STUDIES. — CONTINUED.

Mr. A. C. Lane	*E.* Solid Geometry and Geometrical Conics. — Wilson's Solid Geometry and Conic Sections, with Appendices on Transversals and Harmonic Division. — Geometrical Constructions	2 in 1st half-year, 1 in 2d	28 Fr., 4 Sp., 2 Sc.	34
Prof. C. J. White	1. Applications of Trigonometry. — Spherical Trigonometry, and its applications to Navigation and Astronomy	2	3 Ju., 7 So., 11 Fr., 2 Sp.	23
Prof. Byerly	2. Differential and Integral Calculus (Introductory Course). — Byerly's Differential Calculus. — Lectures	3	1 Se., 3 Ju., 27 So., 1 Fr., 1 Sp.	33
Prof. Byerly	3. Modern Methods in Analytic Geometry. — Theory of Equations. — Todhunter's Theory of Equations. — Lectures, with Syllabus	3	1 Se., 3 Ju., 7 So., 1 Fr., 1 Sp., 1 Gr.	14
Prof. B. O. Peirce and Mr. Knapp	4. The Elements of Mechanics. — The Equilibrium, with and without friction, of Particles and of Rigid Bodies. — The Elements of Graphical Statics as applied to Bridge and Roof Trusses (eight Lectures). — The Kinematics and Kinetics of Straight-line, Circular, and Parabolic Motions of Particles. — Impact	2	1 Se., 2 Ju., 1 Sp.	4
Profs. Byerly and B. O. Peirce	5. Differential and Integral Calculus (Second Course). — The more advanced parts of the theory of the Differential and Integral Calculus with geometrical applications. — Differential Equations. — Elliptic Functions. — Theory of Functions of a single imaginary variable. — Applications to problems in Hydrostatics, Dynamics of Particles, and Rigid Dynamics	3	1 Se., 9 Ju., 2 Gr.	12
Prof. J. M. Peirce	6. Quaternions and Theoretical Mechanics. — Lectures and Exercises. — Hardy's Elements of Quaternions; Tait and Steele's Dynamics of a Particle (Selections)	3	3 Ju., 2 Gr.	5
Mr. Knapp	7. Descriptive Geometry and Perspective	3	3 Sc.	3
Prof. Byerly	[8. Analytic Mechanics	3	Omitted in 1884–85.	
Prof. J. M. Peirce	9. Quaterninons and Theoretical Mechanics (Second Course). — Lectures and Exercises. — Hamilton's Elements of Quaternions, Book III., Chapter II., Section 6; Routh's Rigid Dynamics, 4th ed., Part I. (Selections)	3	3 Se.	3

Profs. Byerly and B. O. Peirce	10. Arbitrary Functions. Riemann's Partielle Differentiel-Gleichungen. — The Theory of the Potential Function and its applications to Problems in Gravitation and Electricity. — The Kinematics of Uniplanar Fluid Motion. — Lectures	3	3 Se., 1 Gr.	4
Prof. J. M. Peirce	11. Higher Principles of Analytic Mechanics. Lectures and Discussions. Peirce's Analytic Mechanics (Chapters IX., X.) — Routh's Rigid Dynamics, 4th ed. (Part II., Chapters I., II., III., V.)	3	1 Se., 3 Gr., 1 Sc.	5
Prof. J. M. Peirce	Course of private reading for Graduates, under the guidance of the Instructor. — A portion of Hamilton's Elements of Quaternions, Book III., Chapter III.; Caley's Elliptic Functions, selected course. Other reading courses offered were not taken.	1	2 Gr.	2
	Meetings for Mathematical Discussion. Short courses of Lectures on various subjects, chiefly by students. Problems. Comparison of Methods. The whole under the management of a committee of students. Average attendance about ten students, chiefly Seniors, Juniors, and Graduates; always one professor present; generally more.	1		
	PHYSICS.			
Dr. Hall	*A*. Daniell's Principles of Physics (486 pages, omitting the portion on Sound and some other shorter portions). — Lectures, with experiments	3	19 Fr., 1 Sp.	20
Prof. Trowbridge, Drs. Hall and Whiting	2. Principles and Methods of Physical Measurements. — Experimental Lectures (twice a week). — Laboratory work (four hours a week), consisting of elementary quantitative experiments in Mechanics, Heat, Light, Sound, Electricity, and Magnetism. — Theoretical Lectures (once a week), at which attendance was voluntary	3	1 Se., 7 Ju., 7 So., 1 Fr., 6 Sp., 2 Gr., 3 Sc.	27
Prof. Lovering	4. Deschanel's Electricity and Magnetism. — Jackson's Optics and Undulatory Theory of Light. — Lectures	3	1 Se., 1 Ju., 3 So., 1 Gr.	6
Prof. Gibbs	5. Thermics and Thermodynamics. — Introductory Lectures on Experimental Thermics. — Lectures on Thermodynamics, with reference to Briot's Théorie mecanique de la chaleur, 2d ed.	3	2 Se., 2 Ju., 1 Gr.	5

ELECTIVE STUDIES. — CONTINUED.

Prof. Trowbridge	*6. Experimental Physics for advanced students. — Lectures and recitations. — Laboratory work	3	4 Se., 3 Ju., 1 Gr.	8
Prof. B. O. Peirce	9. The Mathematical Theory of Electricity (Mascart and Joubert's Treatise). — The Theory of the Potential Function (Lectures). — The Phenomena of Electricity (Wüllner's Experimental-Physik). — Laboratory practice in Electrostatic Measurements	3	1 Ju., 2 Gr.	3
Prof. Trowbridge	*7. Mathematical Electricity. — Maxwell's Electricity and Magnetism. — Mascart's Electricity. — Lectures and recitations	3	2 Se., 4 Gr.	6
Dr. Hall	*8. The Theory of Probability, with application to the Kinetic Theory of Gases. — Merriman's Method of Least Squares, with Selections from Ferrero's Treatise on same subject, and from Chauvenet's Astronomy (Vol. II.). — Meyer's Kinetische Theorie der Gase (Mathematische Zusätze)	2	1 Se., 1 Gr.	2
	The Courses of reading proposed for Graduates were not taken.			
	CHEMISTRY.			
Prof. Jackson	1. Descriptive Chemistry. — Lectures and recitations (twice a week); laboratory work (four hours a week).		2 Se., 14 Ju., 59 So., 11 Fr., 10 Sp., 5 Sc.	101
Mr. Huntington	2. Determinative Mineralogy and Lithology. — Lectures, with study in the Mineral Cabinet. The latter includes a course in Crystallography, with practice in Blow-pipe Analysis, followed by the study of about two hundred and twenty-five mineral species, and practical exercises in their determination	3	5 Se., 8 Ju., 3 So., 6 Sp., 7 Sc.	29
Prof. H. B. Hill	3. Qualitative Analysis. — Lectures (about thirty) and laboratory work	3	6 Se., 22 Ju., 2 Sc.	30
Prof. Cooke and Mr. Young	4. Quantitative Analysis, gravimetric and volumetric. — Solution of twenty problems, involving thirty-seven distinct determinations in duplicate	3	4 Se., 4 Ju., 3 Sp., 1 Sc.	12
Prof. H. B. Hill and Dr. Merrill	5. The Carbon Compounds. — Lectures (three times a week). — Laboratory work		3 Se., 1 Ju., 1 Sp., 1 Gr., 2 Sc.	8

Prof. Cooke	*6. Advanced Inorganic Chemistry, including work in Vapor Density, and Thermo-Chemistry	3	1 Se., 1 Ju., 1 Gr., 1 Sc.	4
Prof. Cooke	[*7. Crystallography and the Physics of Crystals		Omitted in 1884–85.	
Prof. H. B. Hill	*9. Advanced Organic Chemistry. — Research in Organic Laboratory. — Constant daily work		1 Gr.	1
	NATURAL HISTORY.			
Mr. Davis	1. Physical Geography and Meteorology. — Lectures	3	16 Se., 6 Ju., 17 So., 8 Fr., 4 Sp., 1 Gr., 1 Law, 3 Sc.	56
Prof. Mark	2. Zoölogy. — Morphology and Physiology of Animals. — Lectures	3	8 Se., 24 Ju., 42 So., 16 Fr., 6 Sp., 2 Sc.	98
Prof. Goodale	3. Botany. — Lectures and laboratory work, designed to familiarize students with the approved methods of studying native and cultivated plants	4	10 Se., 24 Ju., 13 So., 6 Fr., 1 Sp., 1 Gr., 1 Law, 3 Sc.	59
Prof. Shaler	4. *a*. (*Half-Course*). Geology. — Lectures (twice a week). — Dana's Manual of Geology. — Excursions (voluntary)	2	16 Se., 21 Ju., 39 So., 22 Fr., 9 Sp., 2 Gr., 2 Sc.	111
Prof. Shaler and Mr. Huntington	*b*. (*Full Course*). Geology and Mineralogy. — Geology (as above). — Mineralogy: a practical study of about one hundred mineral species	3	8 Se., 23 Ju., 17 So., 5 Fr., 4 Sp., 1 Gr., 4 Sc.	62
Profs. Goodale and Faxon	5. Biology. — (*First half-year*). Morphology, Histology, and Physiology of the principal types of Plants. — Lectures and laboratory work. — (*Second half-year*). Morphology of Invertebrate Animals (Protozoa, Cœlenterata, Echinoderms, Arthropods and Mollusca). — Dissection of typical forms in the Laboratory, with Lectures on structure and development	6	9 Se., 23 Ju., 7 So., 1 Sp., 1 Gr., 2 Sc.	43
Prof. Faxon	6. Zoölogy (Advanced Course). — Comparative Anatomy of Mollusca and Vertebrata. — Lectures and laboratory work	6	8 Se., 1 Ju., 2 Sp., 3 Sc.	14

ELECTIVE STUDIES. — CONTINUED.

Prof. Goodale	7. Botany (Advanced Course). — Lectures and laboratory work. (1) The identification of the more difficult genera of flowering and of flowerless plants. (2) An examination of the functions of the various organs of plants. (3) Elements of classification	2	3 Se., 1 Gr., 2 Sc.	6
Prof. Shaler	8. Geology (Advanced Course). — Lectures (two or three a week). — Lyell's Principles of Geology. — Field and laboratory work	3	9 Se., 7 Ju., 2 So., 1 Sp., 1 Gr., 3 Sc.	23
Prof. Mark	9. Embryology. — Lectures (once a week), with collateral reading. — Laboratory work, occupying somewhat more than half the student's time. — Special subject of investigation: The embryology of Arachnida		1 Gr.	1
Prof. Hagen	10. Entomology		Omitted in 1884–85.	
Prof. Goodale	11. Morphology and Histology of Phanerogams. — Laboratory investigations, reported upon by each student to the rest. — Pfeffer's Pflanzenphysiologie	3	1 Se., 4 Gr., 1 Sc.	6
Prof. Farlow	[12. Structure and Development of Cryptogams		Omitted in 1884–85.	
Dr. Harrison	13. Anatomy of Domestic Animals. — Lectures (three times a week). — Exercises in Dissection (daily from Nov. 1 to May 1)		1 Se., 21 Ve.	1
Prof. Shaler	14. Palaeontology. — Lectures. — Nicholson's Palaeontology. — Laboratory work	3	12 Se., 2 Ju., 3 Gr., 2 Law, 1 Sc.	20
Prof. Shaler	15. Historical Geology. — Field and laboratory work		1 Se.	1
Prof. Shaler and Mr. Davis	16. Geological Field-work, with training in the principles of Geological Surveying. — Field and laboratory work, and preparation of reports		2 Se., 1 Ju., 1 Gr.	4
Prof. Shaler	17. Palaeontology (Advanced Course). — Laboratory and field work		Omitted in 1884–85.	
Prof. Whitney	18. Economical Geology	2	8 Se., 1 Ju., 1 So.	10

From this table and the corresponding statistics for the two preceding years the following averages are obtained: —

	1882–83.	1883–84.	1884–85.
Average number of courses completed by each student	3.69	3.41	3.40
Average per cent	58.2	58.9	58.6
Average amount of failure for each student	.53	.58	.53

The number of Special Students who, in each of these three years, earned certificates of proficiency by attaining a mark of seventy-five per cent in one or more studies was as follows: —

	1882–83.	1883–84.	1884–85.
In studies amounting to less than one full course . . .	4	7	7
" " at least 1, but less than 2 courses	10	13	13
" " " 2, " 3 "	4	4	5
" " " 3, " 4 "	..	2	6
" " " 4, " 5 "	3	1	1
" " " 5, " 6 "	..	1	1
" " " 6 courses	1	..	1
Whole number entitled to certificates	22	28	34

Although the average amount and quality of the work done by the whole body of Special Students has been remarkably stationary during these three years, there has been a noticeable increase in the number of such students doing a considerable quantity of work of a high grade. The number of those who attained an average of seventy-five per cent on four or more courses last year was eleven, as compared with three in 1883–84, and four in 1882–83; and it appears from the above table that twice as many Special Students earned certificates for studies amounting to at least three courses in 1884–85 as in either of the preceding years.

The scheme of studies adopted for the last Freshman year was continued without alteration for the present year. The transfer of Rhetoric to the Freshman year left no prescribed study in the last three years of the course except the exercises in English Composition. To effect a better distribution of these, the Faculty voted to transfer the six Junior themes to the Sophomore year, making the number of themes written in that year twelve, and leaving forensics as the only prescribed work of the Junior, as they have long been of the Senior, year.

By the insertion of the few remaining prescribed studies of the course in the annual announcement, which was issued in May last, the character of the latter was changed from an "elective pamphlet" to a complete statement of the instruction provided by the Faculty in every department. The list of elective studies was considerably enlarged by the accession of eleven full courses and six half-courses in Greek, Latin, Mathematics, and Physics, representing the old prescribed courses in those departments. Besides these, the following new courses appear: —

Assyrian (Third Course). *Two hours.* Professor Lyon.

General Semitic Grammar. *One hour.* Professor Toy.

Critical Study of Theocritus. *Two hours.* Professor Croswell.

Literary Study of Catullus. *One hour.* Mr. Preble.

Critical Study of Cicero. *Two hours.* Professor Greenough.

Practice in writing and speaking German. *Two hours.* Professor Bartlett.

History of German Literature from Luther to Heine. *One hour.* Dr. Francke.

Dante. *One hour and a half.* Professor Lowell.

Cervantes (Don Quixote). *One hour and a half.* Professor Lowell.

Elementary Philosophy in connection with ethical and religious questions. *Three hours.* Professor Royce.

Modern discussion of the Philosophy of Nature. *Three hours.* Professor Royce.

Political Economy. Special advanced study and research.

History (the same).

The Mediaeval Church, with especial reference to its effect upon public life and upon intellectual and social progress. *Two hours.* Professor Emerton.

The Antiquities of Athens and of Olympia. *One hour and a half.* Dr. Fowler.

Descriptive and Spherical Astronomy. *Three hours.* Professor C. J. White.

Theory of Functions. *Three hours.* Mr. F. N. Cole.

Principles and Methods of the Differential and Integral Calculus. *Two hours.* Professor J. M. Peirce.

Physical Geography (Advanced Course). *Two hours.* Professor Davis.

Microscopic Anatomy. *Three hours, first half-year.* Professor Mark.

Comparative Osteology. *One hour, besides laboratory work.* Dr. Slade.

A new and important feature of the scheme is the establishment of courses for special advanced study and research in History and in Political Economy. These are not courses in the ordinary sense, in which instruction is given in a certain subject, the same to all students who attend it. They are designed to provide a place in the scheme for the work of a competent student in any of the more advanced courses of the department, who may wish to pursue beyond the limits of the course special studies in one or more of the subjects treated in it. The instructor of the course from which the subject is selected directs and supervises the student's researches, and also determines whether his work shall be counted towards his degree as a full course or as a half-course. Under this provision Professor Dunbar is this year conducting special studies in financial history, and Dr. Channing in American diplomatic history. It need hardly be said that the students admitted to these courses will be only such as are of special promise in the departments concerned, and seldom below the rank of Senior. Under proper restrictions the new provision cannot fail to be a valuable improvement of the scheme of instruction, and it is likely to be extended to other departments.

Besides the additions to the list which have been enumerated above, some important alterations were made. In the series of Latin courses, the Odes of Horace were removed from their traditional place as a Freshman study, and put in the second half of Latin 1, a course taken chiefly by Sophomores; while the Satires and Epistles were taken out of Latin 1, and are to be read in a separate half-course, designed for Juniors. This change was made partly for the purpose of deferring the reading of Horace's poems until the student is mature enough and sufficiently at home in the language to appreciate them, and partly because the instructors desire to devote their efforts chiefly, in the earlier courses, to training the student to read, and to use for that purpose only "such works as deal with a limited subject in a straightforward way, encumbering his progress as little as possible with unfamiliar allusions." With this end in view Terence will be read with Livy and Cicero in the Freshman courses, and his place in Latin 1 will be supplied by Pliny and Tacitus.

The return of Professor Lowell enabled the Faculty to enrich the instruction in Italian and Spanish by the half-courses in Dante and Cervantes. In Philosophy, the retirement of Professor Bowen from a portion of his work and the accession of Dr. Royce to the department as assistant professor led to a rearrangement of some of the courses. Professor Bowen will give his two courses on French and German Philosophy only in alternate years. On the other hand three introductory courses are provided, of which Course 1, under Professor Palmer, will be devoted exclusively to Greek Philosophy; in Course 2 Professor James will teach Psychology and Logic; while Professor Royce, in Course 3, already mentioned in the list above, will introduce the student to Philosophy on its ethical and religious side. The philosophy of Evolution, heretofore taught in a half-course by Professor James, will be provided for in Professor Royce's new course on the Philosophy of Nature. In History, Professor Torrey's courses on Forms of Government and Political Constitutions and on Public International Law are to be given hereafter only in alternate years. On the other hand the two courses on American history, of which one had to be withdrawn last year owing to the illness of the instructor, Dr. Hart, are both given this year.

The whole number of elective courses of instruction offered for the present year was one hundred and eighty, of which one hundred and thirty-three are rated as full courses, and forty-three as half-courses, while four may be taken either as full or as half-courses. If we reckon as heretofore each full laboratory course as a three-hour study,

ELECTIVE STUDIES.	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.	1885–86.
Semitic Languages	3	3	3	3	4	4	11	8	13	16	17	17
Sanskrit and Zend	6	3	3	3	6	6	11	10	10	10	10	10
Greek	23	25	23	23	24	26	29	25	25½	26	41	37½
Latin	15	19	20	18	22	18	22	26	23	27	33	38½
Greek and Latin .	. .	3	3	2	2	3	3	8	3	6	8½	6½
English	5	8	11	14	15	16	16	10	15	15	19½	19½
German	11	14	17	19	24	25	22	23	23	21	20	20
French	18	12	15	15	15	15	14	18	14	16	22	22
Italian and Spanish	14	17	17	17	19	20	20	20	18	12	18	21
Philosophy . . .	12	12	15	15	21	26	27	20	24	24	25½	27
Political Economy	6	6	6	6	6	9	9	7	7	14½	14½	16½
History	20	20	23	23	25	25	30	35	35	32½	33	29
Roman Law . . .	3	3	3	3	3	4	4	5	4	4	4	4
Fine Arts	6	9	4	6	9	8	6	8	11	11	7	10½
Music	11	14	11	12	13	13	15	14	14	15	15	14
Mathematics . .	24	20	23	24	28	30	26	26	24	25	37½	43½
Physics	14	15	15	17	22	21	19	19	20	23	23	23
Chemistry . . .	14	14	18	18	21	26	26	23	23	26	24	24
Natural History .	23	23	25	24	30	42	46	36	45	49	49	58
Aggregate, elective.	228	240	255	262	308	337	356	347	351½	373	421½	441½
PRESCRIBED STUDIES.												
Greek	3½	3	3	3	6	6	6	6	6	6	. .	. .
Latin	3½	3	3	3	6	6	6	6	6	6	. .	. .
Greek and Latin .	. .	½	½	½	½	½	½	½	½	½	. .	. .
English (Rhetoric)	2	2	2	2	2	2	2	2	2	2	3	3
German	3	3	3	3	3	3	3	3	3	3	3	3
French	2	2	3	3	3	3	3	3	3	3	3	3
Philosophy . . .	2½	2	2	2	2	. .	. .	. .	. .	. .	. .	. .
Political Economy	1	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
History	1	1	2	2	2	. .	. .	. .	. .	. .	. .	. .
Mathematics . . .	4	3½	3½	3½	7	7	7	7	7	7	. .	. .
Physics	4	3½	2	2	2	4	4	4	4	4	½	½
Chemistry	1½	½	½	½	½	½	½	½	½	½	½	½
Aggregate, prescribed.	28	25	24½	24½	34	32	32	32	32	32	10	10
Aggregate, prescribed and elective.	256	265	279½	286½	342	369	388	379	383½	405	431½	451½

and assign two and a half hours to each study in which the instructor holds two or three exercises a week at his pleasure, the aggregate number of hours per week of instruction offered in elective studies is four hundred and forty-one. The accompanying table, which gives the number of hours per week of instruction in both prescribed and elective studies provided in the several departments for a series of twelve years, shows the steady growth during that period of the resources for learning which the College affords its students.

A point of the highest interest in the practical working of the elective system is its effect on the character of the college education. To what extent do the several studies, new and old, contribute to the training of the undergraduates of the present time? The following table records the experience of six years on this point. This period — beginning with 1879–80, when the introductory courses in Philosophy and History were made elective, leaving no prescribed studies except Rhetoric and English Composition after the Freshman year, and ending with 1884–85, when the Freshman work was made largely elective — was chosen as one during which there was no material change in the system. The choices represented were all made, so far as the system is concerned, under substantially the same conditions; they are the free choices of Seniors, Juniors, and Sophomores who had all taken the prescribed Freshman course, with those of a few Freshmen who had qualified themselves for elective studies by anticipating a part of the Freshman work. The table was constructed for the first half of the period by finding from a careful collation of the returns

Percentage of the elective work of undergraduates devoted to	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.	Average for six years.
Semitic Languages	.2	. .	.2	.1	.3	.3	.19
Sanskrit and Zend .	.2	.2	.2	.1	.1	.2	.17
Greek	6.9	6.9	6.6	6.7	6.8	8.0	6.99
Latin	8.0	7.1	6.4	6.2	6.2	5.1	6.50
Greek and Latin . .	.1	.3	.1	. .	.1	. .	.10
English	5.3	5.1	4.9	3.8	6.4	8.7	5.62
German	11.0	10.0	11.1	9.6	7.1	7.6	9.40
French	6.2	6.2	6.9	4.8	5.4	7.5	6.17
Italian	2.9	3.3	2.2	.8	.8	1.1	1.85
Spanish	1.5	1.7	1.9	1.5	1.6	1.6	1.64
Philosophy	9.2	8.0	5.6	8.0	8.5	6.3	7.60
Political Economy .	5.5	4.9	6.5	6.9	9.9	12.3	7.67
History	12.6	15.5	18.8	17.7	15.1	15.9	15.94
Roman Law	.8	.2	1.0	1.1	.7	.8	.62
Fine Arts	5.0	2.6	3.8	4.6	6.0	1.6	3.94
Music	1.7	1.8	1.3	1.5	1.9	3.5	1.95
Mathematics . . .	3.0	3.0	2.7	3.1	2.7	2.5	2.84
Physics	2.3	2.7	3.4	1.9	2.1	1.2	2.27
Chemistry	6.1	6.9	6.6	5.3	5.4	4.4	5.79
Natural History . .	11.6	13.6	9.9	16.7	13.0	11.4	12.70

the number of hours of attendance per week devoted to each department by all the undergraduates electing courses in it, and from these results calculating the proportion in which every hundred hours of attendance was actually distributed among the several departments. The percentages for the last three years were estimated in the same way, except that, in accordance with the change in the method of rating students' work made by the Faculty in 1882, a full course of study instead of an hour of attendance was used as the unit.

It is to be observed, in the first place, that a certain amount of fluctuation in the proportion in which the several departments are resorted to is inevitable, owing to the changes which must occur from year to year in the instruction offered on the one hand, and on the other in the tastes and needs of the students. Such fluctuations as appear in French, in Philosophy, in Mathematics, and even in History and Natural History find a sufficient explanation in these causes, while the constancy of the percentages in Spanish, and for five years in Greek and Music, must be regarded as extraordinary. The sudden increase in the percentage of Greek in 1884–85 is wholly accounted for by the fact that Professor J. W. White's course on the Private Life of the Athenians, which was attended by forty-eight undergraduates, is given only in alternate years, and was given for the first time as a full course in that year. The similar increase in the percentage of Music, on the other hand, represents a genuine though perhaps temporary increase of the resort to that department, being due to the sudden rise in the number of undergraduates in the course on the History of Music from twenty-seven in 1883–84 to seventy-nine in 1884–85. The striking depression in English studies in 1882–83 is partly but not wholly due to the suspension of the course in Oral Discussion, which in the preceding year had been attended by thirty-nine Seniors; but the remarkable increase of the last two years represents genuine growth, being due to the greater attention which the students have begun to give to English Composition. Some sudden changes have resulted from temporary causes; thus the falling off of the percentage of Fine Arts from six in 1883–84 to hardly more than a quarter of that number in 1884–85 was occasioned by the great reduction in the resources of the department due to the necessary absence of Professor Norton. Other causes of fluctuation, which will suggest themselves to those familiar with the subject, would require a fuller treatment than can be undertaken here. On the whole, it would be hazardous to infer any tendencies from the changes which the table exhibits, except where they correspond with known facts which have an obvious bearing upon them, as in the case of Political Economy, the remarkable growth of which as a college study undoubtedly reflects a growing appreciation in the community.

The table is rather valuable as showing the character of the college education that is likely to result from freedom in the choice of studies. And in examining it from this point of view, it should not be forgotten that it represents only the last three years of the College course, and not even the entire work of those years; and that the students whose choice of studies it exhibits came to those studies from a long and severe training, chiefly in Classics and Mathematics, but including courses in French and German also, and some study of Physical Science. The elective studies of these undergraduates amounted in fact to not quite two thirds of their entire work in College alone; and to represent the proportion which the elective work done in the several departments bears to the whole work of the College course, the percentages in the foregoing table need to be considerably reduced. The average percentages for 1879–85, so reduced, are combined in the following table, with the corresponding figures for the prescribed studies which were pursued by all the undergraduates whose choices form the basis of these statistics. By the side of these are placed for comparison similar statistics for the year 1864–65, when the College course came as near being entirely prescribed as it has at any time within fifty years. The studies of the first two years were the same for all, and in each of the last two, only one course was elective. A Sophomore could take French as an *extra* study and a Junior or a Senior could take one *extra* in addition to his one elective course; there were also certain lectures, some of which undergraduates were required to attend, and some they attended voluntarily. But no credit was given for these *extra* or lecture courses, and the amount of work done in them cannot be estimated with sufficient definiteness for our present purpose. The instruction received in them could hardly have exceeded that which undergraduates now derive from the public lectures and evening readings provided for them.

The preparatory training on which the College course was based twenty years ago differed materially from what it is now. The proportion of Classics was greater, that of Mathematics less, than at present; and to the requirements of that day have been added, partly at the expense of the Classics, three new subjects, — English Composition, Physics, and French or German. Further, the candidate has an option between a shorter and a longer course of preparation in Greek, Latin, Mathematics, and Physical Science. Our comparison could be made more complete if it were possible to represent these differences; but sufficient data for a satisfactory estimate are wanting. One subject, however, in the present requirements for admission — the modern language — presents a peculiar difficulty. The candidate is at liberty to offer either German or French for admission, provided he take the other in the Freshman year. The great majority study French at school and German in College; in other words, a much larger number of Freshmen study German than French. Consequently, if we took into account only the college work of students in these languages, our results would indicate a preponderance of German over French which does not exist. As the modern language is a clear addition to the earlier admission requirements, having in fact been transferred to that category from a prescribed college study, it seems the simplest and fairest solution of the difficulty to include the prescribed work of students in both languages in our estimate of the prescribed studies of 1879–85. With this addition the prescribed work of undergraduates amounted to four tenths of the whole College course. In 1864–65 it amounted to more than nine tenths.

Percentage of the work of undergraduates devoted to	1864–65.			1879–85.		
	Prescribed.	Elective.	Total.	Prescribed.	Elective.	Total.
Semitic Languages	. .	. .	. .	. .	.12	.12
Sanskrit and Zend	. .	. .	. .	. .	.11	.11
Greek	16.59	1.04	17.63	5.00	4.22	9.22
Latin	16.84	.55	17.39	5.00	3.92	8.92
Greek and Latin	. .	. .	. .	1.00	.06	1.06
English	16.97	. .	16.97	8.50	3.40	11.90
German	. .	1.77	1.77	5.00	5.66	10.66
French	. .	2.56	2.56	5.00	3.73	8.73
Italian	. .	.85	.85	. .	1.11	1.11
Spanish	. .	.30	.30	. .	.99	.99
Philosophy	7.79	. .	7.79	. .	4.59	4.59
Political Economy	1.27	. .	1.27	. .	4.62	4.62
History	6.52	. .	6.52	. .	9.31	9.31
Roman Law	. .	. .	. .	. .	.38	.38
Fine Arts	. .	. .	. .	. .	2.37	2.37
Music	. .	. .	. .	. .	1.17	1.17
Mathematics	10.83	1.18	12.01	6.00	1.72	7.72
Physics	6.79	. .	6.79	3.50	1.37	4.87
Chemistry	5.16	1.33	6.49	1.00	3.49	4.49
Natural History	1.66	. .	1.66	. .	7.66	7.66
Total	90.42	9.58	100.00	40.00	60.00	100.00

It is perhaps unnecessary to point out that as the prescribed studies represented in this table are those that had been pursued by the students whose choices of elective studies are represented, the work of the Freshman year 1884–85, which was more than half elective, is not included in these statistics. The choices of studies made by the two Freshman classes who have had the privilege of election are shown in the following table: —

	1884–85.	1885–86.
Whole number of Freshmen	255	258
Number of Freshmen taking one or more elective courses in		
Greek	163	125
Latin	196	191
German	26	36
French	98	100
History	131	132
Mathematics	141	92
Physics	25	18
Chemistry	11	19
Natural History	50	82
Number of Freshmen whose choice includes studies in Greek, Latin, and Mathematics	83	86

The committee of the Faculty, to whom certain proposed changes in the requirements for admission had been referred, resumed their labors early in the past year and finally presented in February a unanimous report. The plan proposed by the committee was adopted on March 3 by the Faculty with only a few dissenting votes, and now awaits the action of the Corporation and Board of Overseers.

CLEMENT L. SMITH, *Dean*.

December 9, 1885.

To the President of the University:

Sir, — I have the honor to submit the following report on the state of the Graduate Department for the year 1884–85: —

The number of students in the Department was seventy-six. Of these students, eleven were neither candidates for a degree nor holders of fellowships; fifty-six were candidates for the degree of Master of Arts, Doctor of Philosophy, or Doctor of Science; and thirteen (including four candidates for degrees) were holders of fellowships.

Twenty-one persons were admitted to candidacy for the degree of Master of Arts, of whom one withdrew early in the year and is not counted in the enumeration of candidates; and one candidate for the degree of Doctor of Philosophy was, at his own request, transferred to the list of candidates for the degree of Master of Arts. Thus, the number of candidates for the degree of Master of Arts was twenty-one; of whom seven have withdrawn, eleven received the degree at the end of the year, and three are still candidates for it.

Fifteen persons were admitted to candidacy for the degree of Doctor of Philosophy and Master of Arts; and seventeen candidates for that degree held over from the year 1883–84; of whom, however, two withdrew early in the year and are not counted in the enumeration.

The whole number of candidates for the degree was, therefore, thirty. Of these candidates, eight have withdrawn, one has become for this year a candidate for the degree of Master of Arts, four received the degree of Doctor of Philosophy and Master of Arts at the end of the year, and seventeen (of whom ten are studying at the University) are still candidates for it. One candidate for this degree took the degree of A.M. at the end of the year, on appointment to a fellowship, and withdrew from candidacy for Ph.D. to continue his studies in Germany.

Two persons were admitted to candidacy for the degree of Doctor of Science; and the whole number of candidates for that degree was five; of whom one has withdrawn after completing his required period of study, and four are still candidates. But of these four, one has completed his course of study and presented a thesis, which has been accepted, and is not now studying at the University.

The following are the names of persons admitted to degrees, on recommendation of the Academic Council, at Commencement, 1885:—

A.M.

William Tufts Crocker, A.B. 1884.
Edward Cummings, A.B. 1883.
Robert Willard Greenleaf, A.B. 1877.
Thaddeus William Harris, A.B. 1884.
Mellen Woodman Haskell, A.B. 1883.
Alexander George McAdie, A.B. (*Coll. City of N. Y.*) 1881, A.M. (*Ibid.*) 1884.
Edwin Guthrie McInnes, A.B. 1883.
William Lenhart McPherson, A.B. 1884.
Charles Marsh Marvin, A.B. 1884.
Silas Allen Potter, A.B. 1876, M.D. 1884.
Greenough White, A.B. 1884.
Isaac Spalding Whiting, A.B. 1882.

A.M. with LL.B.

Henry Winthrop Hardon, A.B. 1882.
George Reavis Hughes, B.Lit. (*Univ. Va.*) 1882.
William Cushing Wait, A.B. 1882.
Henry Eldridge Warner, A.B. 1882.

A.M. with M.D.

Alanson Joseph Abbe, A.B. 1881.
Edward Roscoe Merrill, A.B. 1881.

Ph.D. and A.M.

Hammond Vinton Hayes, A.B. 1883.

Department, Physics. *Subjects*, Electricity and Magnetism. *Thesis*, "On the Rotational Effect in a Magnetic Field, and other subjects."

Albert Andrew Howard, A.B. 1882.

Department, Philology. *Subjects*, Greek and Latin. *Thesis*, "De usu quodam infinitivi perfecti latini commentatio."

Benjamin Rand, A.B. 1879, A.M. 1880.

Department, Philosophy. *Subjects*, Metaphysics and Ethics. *Thesis*, "Consciousness and Immortality."

James Rignall Wheeler, A.B. (*University of Vermont*) 1880.

Department, Philology. *Subjects*, Greek and Latin. *Thesis*, "De comparationibus et translationibus quas e mari et re navali mutuati sunt Aeschylus et Sophocles."

The Parker, Kirkland, and Walker Fellowships were held by the following persons during the year 1884–85: —

Parker Fellowships.

Frank Nelson Cole, A.B. 1882, studying Mathematics at Leipzig.

Harold North Fowler, A.B. 1880, studying the Classics at Bonn.

James Richard Jewett, A.B. 1884, studying the Semitic Languages in Syria.

William Patten, S.B. 1883, Ph.D. (*Leipzig*) 1884, studying Zoölogy at Trieste and Naples.

John Thornton Kirkland Fellowship.

John Ulric Nef, A.B. 1884, studying Chemistry at Munich.

James Walker Fellowship.

Benjamin Rand, A.B. 1879, A.M. 1880, studying Philosophy at this University.

Messrs. Cole, Fowler, and Rand withdrew from their fellowships at the end of the academic year. Mr. Cole, after studying for one year at this University, has been for two years at Leipzig, devoting the first year to Physics, and the second to pure Mathematics under the direction of Professor Felix Klein. He is appointed for the current year lecturer on the Theory of Functions at this University, and is a candidate for the degree of Ph.D., for which he will present himself at the coming Commencement. Mr. Fowler, after a year of study at the American School at Athens, has studied two years at Bonn, where he took the degree of Ph.D. last summer. He is appointed for the current year Instructor in Greek at this University. Mr. Rand studied for a year and a half at Heidelberg, and, being obliged by illness to return to this country early in 1884, pursued his studies during the past year at this University, where he took the degree of Ph.D. last summer.

At the end of the year, Messrs. Jewett, Nef, and Patten were reappointed to their fellowships, and the following new appointments were made for 1885–86: —

To Parker Fellowships.

Mellen Woodman Haskell, A.B. 1883, A.M. 1885, a distinguished student of Mathematics, now continuing his studies at Leipzig.

Henry Theodore Hildreth, A.B. 1885, a distinguished student of the Classics, now continuing his studies at Athens.

To the Walker Fellowship.

Duren James Henderson Ward, A.B. (*Hillsdale Coll.*) 1878, A.M. (*Harvard*) 1883, D.B. (*Hillsdale Coll.*) 1884, a distinguished student of Philosophy, now continuing his studies at Berlin.

The Harris Fellowship and the Rogers Scholarship are bestowed upon graduates in accordance with recommendations of the College Faculty, and are under the supervision of that Faculty. They were held by the following persons during the year 1884–85 : —

Harris Fellowship.

Roland Thaxter, A.B. 1882, studying Botany at this University.

Rogers Scholarship.

Charles Hall Grandgent, A.B. 1883, studying Modern Languages at Paris.

The Morgan Fellowships are given on the condition of study at this University. They were held by the following persons during the year 1884–85 : —

Morgan Fellowships.

William George Brown, S.B. (*Univ. of Va.*) 1877, a student of Chemistry, to December, 1884, when he was appointed Professor of Chemistry at the University of Virginia.

Horace Addison Hoffman, A.B. (*Indiana Univ.*) 1881, A.M. (*Harvard*) 1884, a student of the Classics.

Leander Miller Hoskins, S.B. and B.C.E. (*Univ. of Wisconsin*) 1883, a student of Mathematics.

William Albert Locy, S.B. (*Univ. of Michigan*) 1881, S.M. (*Ibid.*) 1884, a student of Natural History.

Arthur William Palmer, S.B. (*Illinois Industrial Univ.*) 1883, a student of Chemistry, appointed on the resignation of Mr. Brown.

The following appointments were made for the year 1885–86, Mr. Palmer being the only applicant for reappointment : —

Morgan Fellowships.

Orrin Benner Clark, A.B. (*Univ. of Chicago*) 1872, A.M. (*Ibid.*) 1879, Professor of English at Indiana University, a student of English.

George Henry Johnson, S.B. (*Rutgers Coll.*) 1882, C.E. (*Ibid.*) 1885, M.S. (*Cornell Univ.*) 1883, a student of Mathematics.

Arthur William Palmer, as above, reappointed.

Hiram Miner Stanley, A.B. (*Lake Forest Univ.*) 1881, A.M. (*Ibid.*) 1884, a student of Philosophy.

In 1885, Professor Tyndall gave to Harvard College the sum of ten thousand eight hundred dollars, with directions " to apply the whole net income thereof in supporting or assisting to support one or more American pupils who may have shown decided talents in Physics, and preferably such as shall express the determination to devote their lives to the advancement of theoretic science and original investigation in that department of learning."

The JOHN TYNDALL SCHOLARSHIP has been established on this foundation, and is placed under the supervision of the Academic Council. The following appointment has been made to this scholarship for the year 1885–86: —

Tyndall Scholarship.

HUGH HENRY BROGAN, A.B. 1885, a distinguished student of Physics and Mathematics, who will pursue his studies in Germany.

JAMES MILLS PEIRCE,
Secretary of the Academic Council.

8 DECEMBER 1885.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — In the absence of the Dean of the Divinity School, I respectfully submit the following report of the academic year 1884–85:

Twenty-six students were connected with the School during the year. They were distributed as follows: —

Resident Graduates	6
Senior Class	5
Middle Class	5
Junior Class	4
Special Students	6

Of these students, twenty-one, or 80+%, had the degree of A.B. The proportion in the same year in the Law School was 76+%; and in the Medical School 47+%. The advance in the standard of education of Divinity students may be indicated thus: —

Students holding degree of A.B.,	1884–85	80+%
" " "	1883–84	65+%
" " "	1882–83	63+%
" " "	1881–82	48+%
" " "	1880–81	56+%

It should, however, be stated that among those who did not hold the degree of A.B. have been some of the most successful students in the School.

The librarian's report is as follows: —

Accessions:	Volumes	124
	Pamphlets	17
	Periodicals	170
Volumes, total in library		17,410
Pamphlets, " "		2,288
Periodicals, " "		3,536

The important incidents of the year appear to be the following: —

1. THE NUMBER AND QUALITY OF RESIDENT GRADUATE STUDENTS. — These students represented the seminaries at Newton, Hartford, Meadville, Andover, Hillsdale, and the Union Seminary at New York

City. They were also graduates of Brown University, Dartmouth College, the University of Rochester, Lake Forest University, and Hillsdale College. All were men of distinguished excellence. Two, at the end of the year, secured University fellowships in competition with advanced students from all departments of the University. In 1879, as chairman of the committee to visit the Divinity School, I had occasion to report: "The students for some years to come are likely to be few, though they are also likely to be of good quality. The best that can be looked for is that a certain number of mature students will seek this broader training after their course in another school is ended." This expectation seems to have been already in some degree fulfilled.

2. THE INCREASE OF SERVICE RENDERED BY THE TEACHERS OF THE DIVINITY SCHOOL TO OTHER DEPARTMENTS OF THE UNIVERSITY. — A considerable part of the instruction in the Divinity School was recognized some years ago by the Academic Council as belonging to the general studies of the University. Ten such courses were announced in the Elective Pamphlet as open to students in other departments. In 1883–84, fifty College students elected these courses; and in 1884–85, seventy-six College students, two Law students, and one Scientific student received instruction from professors of the Divinity School. This enlargement of duty appears to be an important contribution to the University idea. It is to be classed with the two courses of lectures which have been given in the Divinity School by officers of other departments of the University. In each case the fundamental interest lies in the bringing of the strength of the separated departments to increase the welfare of the whole. In both directions, — in offering its own service to the rest of the University, and in inviting the service of other departments for itself, — the first steps toward this University idea have been taken by the Divinity School.

3. THE SUCCESSFUL DEVELOPMENT OF AN ELECTIVE SYSTEM. — Each student presents at the beginning of the year his plan of study. This plan is subject to correction, and it is mutually understood that no department shall be wholly neglected by any student. Within these limits all the studies of the School, and the order in which they shall be taken, are matters of election. It was feared that such a plan would have its dangers, and that certain studies would be much neglected. This has not been the case. In no instance has it been necessary to correct the student's judgment, and no department has found itself at a disadvantage. Perhaps the most marked success of the system has been seen in the Semitic courses. Here for many years, under the prescribed system, there has been some degree of

chafing; while, left to their own choice, more than a fair proportion of students have elected these courses, and far more work has been given to them than ever before. The Semitic Seminary has met twice a month with an attendance of twelve, and has had for its general subject of discussion the Semitic idea of the future life.

4. THE RECOGNITION AS A PART OF TRAINING FOR THE MINISTRY OF THE STUDY OF SOCIAL REFORMS. — The modern minister has a new demand made upon him in this direction. He is expected to be the adviser of his community in its charities, its temperance work, and its varied social problems. Here seems to be a great opportunity for which the profession has not yet prepared itself. No theological school in this country, and indeed no college or university, has fully accepted as a part of its duty the instruction in such problems. Yet, on the other hand, in many of the colleges, and by a coincidence of interest, experimental courses are beginning. These scattered experiments are described by Mr. F. B. Sanborn in his report to the Social Science Association this year; and of the theological schools of the country, the Harvard Divinity School appears to be the only one which has undertaken systematic instruction of this kind.

5. THE PROGRESS OF THE SCHEME FOR A NEW LIBRARY BUILDING. — This demand, it will be remembered, was made imperative by the gift of the Ezra Abbot library. During the past year satisfactory plans have been secured, the estimates for which amount to $36,000. Individual subscriptions, and the gift of the Society for Promoting Theological Education, have reached a sum within ten thousand dollars of the amount needed, and it is safe to hope that the building will be erected during the summer of 1886. It seems best to urge, however, that this is not the end of the expenditure on buildings which the School immediately needs. It is absolutely necessary that Divinity Hall should be so renovated as to make it a modern and attractive building. The Divinity School deserves to be as well housed as the rest of the University, and it is at present in great contrast with all other departments. It should be, in my opinion, the purpose of the Corporation to utilize for the Divinity School the square of ground which lies behind Divinity Hall, and to develop it into a quadrangle of the same general form as the quadrangle of the Agassiz Museum. Of this space, Divinity Hall would form the front, the new library building should be the north side and should be connected with Divinity Hall by a covered passage. On the south side should be placed a new and more commodious chapel, and the rear should be for the present left open to the woods beyond.

FRANCIS G. PEABODY, *Acting Dean.*

NOVEMBER, 1885.

Instructors.	Subjects.	Attendance.		
		Divinity Students.	College Students.	Hours per week.
	STUDIES CONNECTED WITH THE OLD TESTAMENT.			
Prof. Lyon	1. Hebrew. — Davidson's Grammar. — Explanation of parts of the Pentateuch, Historical Books, and Psalms	3	6	3
Prof. Toy	2. Hebrew. — Interpretation of parts of Deuteronomy and the Poetical Books — Textual Criticism (Lectures)	8		2
Prof. Lyon	3. Aramaic. — Grammars of Nöldeke and Riggs. — Rödiger's Chrestomathia. — Interpretation of selections from the Peshitto and the Targums, and from Daniel and Ezra	8	1	2
Prof. Toy	4. History of Israel, political and social, from the earliest time to the present (Lectures)	4		2
Prof. Toy	5. History of the Religion of Israel (Lectures). — Schultz's Alttestamentliche Theologie	12		1
	The Semitic Seminary met twice a month	12		
	STUDIES CONNECTED WITH THE NEW TESTAMENT.			
Prof. Thayer	1. N. T. Greek; Hermeneutics; Life of Christ; Exegesis of the Gospels begun	5		2
Prof. Thayer	2. Life of Paul; Study of Epistles	4		2
Prof. Thayer	3. The English Bible and its Revisions; Lectures on the Future Life	6		2
	CHURCH HISTORY.			
Prof. Emerton	1. The Conflict of Christianity with Paganism to about A.D. 800	8	8	2
Prof. Emerton	2. History of the Protestant Reformation and the Roman Catholic Reaction	4	20	2
Prof. Emerton	3. History of Christian Doctrines	4		2
	COMPARATIVE RELIGION.			
Prof. Everett	1. Studies in the Comparative History of Religions (particularly the Vedic, the later Brahmanic, the Buddhist, the Mazdean and the Chinese)	10	1	2
Prof. Lyon	2. The Babylonian-Assyrian Religion	11		1

	ETHICS.			
Prof. Peabody	Ethical Theories and Social Problems. — Practical examination of the questions of Charity, Temperance, Labor, Prisons, Divorce, etc. — Lectures and Essays	7	41	1
	THEOLOGY.			
Prof. Peabody	1. The Philosophy of Religion. — Caird's Philosophy of Religion. — Schleiermacher's Reden über die Religion. — Lectures	9	7	1
Prof. Everett	2. Systematic Theology begun: The Psychological Basis of Religious Faith	8		2
Prof. Everett	3. Systematic Theology continued: The Content of Christian Faith	9		3
	HOMILETICS AND PASTORAL CARE.			
Prof. Peabody	1. The Structure and Analysis of Sermons	5		1
Prof. Peabody	2. Each student writes six sermons during the year, three of which are preached before the two upper classes and criticised by students and teacher; the rest are criticised privately both as to composition and delivery, in preparation for the public preaching named below	12		2
Prof. Peabody	3. Liturgics: the History of Worship	8		1
	ELOCUTION.			
Mr. Jones	Class instruction once a week. Private instruction for members of the Senior Class.			
	GENERAL EXERCISES.			
	Preaching by students in the Chapelof the School, open to the public. Once a week. Debate by students, each speaker being criticised in the presence of the School. Once in two weeks. Conference Meetings, conducted by students, alternating with the above. Once in two weeks. Morning Prayers, conducted by teachers and students.			

To the President of the University:

Sir, — I beg to submit the following report upon the Law School for the academic year 1884–85: —

The table on pp. 112, 113 gives the courses of study and instruction during the year, the names of the instructors, the text-books used, the number of exercises per week in each course, and the number of students who offered themselves for examination in each course at the end of the year.

The following table exhibits the attendance at the School during the last fifteen years: —

	1870–71.	1871–72.	1872–73.	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.
Whole no. of students in the School	165	138	117	141	144	173	199	196	169	177	161	161	138	150	156
No. in the School during the whole year	107	107	109	121	130	153	168	172	137	138	136	139	120	130	139
No. in the School only part of the year . .	58	31	8	20	14	20	31	24	32	39	25	22	18	20	17
Average number . .	136	123	113	131	137	163	184	183	154	157	149	146	129	140	148

The following table exhibits the School as divided into classes since the establishment of the three-years' course and the examination for admission: —

	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.
First Year	72	63	78	57	61	59	58	75
Second Year	79	50	32	58	41	38	40	37
Third Year	—	—	21	14	25	20	22	17
Sp. Students	31	47	46	32	34	21	30	28

In regard to the foregoing table it is to be observed that, although the three-years' course went into operation at the beginning of 1877–78, there was no third-year class until 1879–80. It is also to be observed that the second-year class of 1877–78 did not take the three-years' course, but was graduated at the end of the second year, that class having entered the School before the three-years' course went into operation.

The following table exhibits the results of the examinations for admission in each year since they were established: —

	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.	1883-84.	1884-85.
Offered . .	16	15	18	25	19	12	12	17
Admitted .	7	7	12	13	16	10	5	11

The following table exhibits the results of the examinations for a degree in each year since the establishment of the three-years' course: —

	1877-78.			1878-79.			1879-80.			1880-81.			1881-82.			1882-83.			1883-84.			1884-85.		
Year.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
1st	66	51	15	50	42	8	73	69	4	45	43	2	49	44	5	46	44	2	51	41	10	61	56	5
2d	66	47	19	40	39	1	28	26	2	49	46	3	38	37	1	36	34	2	35	31	4	30	29	1
3d							22	18	4	18	18	0	36	33	3	21	19	2	26	25	1	23	19	4

In regard to the foregoing table it is to be observed that it includes no Special Students, and hence that all the applicants included in it were either graduates of colleges or had passed the examination for admission. Of course this remark does not apply to the second-year class of 1877-78, and this accounts in part for the much greater number of failures in that class.

The following table exhibits the results of the examinations for the honor degree in each year since it was established: —

	1878-79.			1879-80.			1880-81.			1881-82.			1882-83.			1883-84.			1884-85.		
Year.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
2d	26	12	14	17	7	10	39	16	23	27	11	16	32	11	21	21	7	14	22	8	14
3d				9	7	2	5	3	2	13	10	3	11	10	1	8	5	3	6	5	1

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
	FIRST YEAR.		
Prof. Gray	Real Property. No text-book	2	65
Prof. Keener	Contracts. Langdell's Cases on Contracts	3	62
Prof. Ames	Torts. Ames's Cases on Torts	2	69
Prof. Thayer	Criminal Law and Criminal Procedure. No text-book	1	65
Prof. Ames	Civil Procedure at Common Law. Ames's Cases on Pleading	1	62
	SECOND YEAR.		
	HONOR COURSE.		
	Required Subjects.		
Prof. Thayer	Evidence. No text-book	2	22
Prof. Langdell	Jursdiction and Procedure in Equity. Langdell's Cases in Equity Pleading	2	22
Prof. Gray	Property. No text-book	2	22
Prof. Ames	Trusts. Ames's Cases on Trusts	2	22
	Elective Subjects.		
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	10
Prof. Keener	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	12
	ORDINARY COURSE.		
	Elective Subjects.		
Prof. Thayer	Evidence No text-book	2	14
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading	2	5
Prof. Gray	Property. No text-book]	2	14
Prof. Ames	Trusts. Ames's Cases on Trusts	2	18
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	9
Prof. Keener	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	6

	THIRD YEAR.		
	HONOR COURSE.		
	Required Subjects.		
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction	2	6
Prof. Ames	Partnership and Corporations. Ames's Cases on Partnership	2	5
Prof. Langdell	Suretyship and Mortgage. No text-book	2	6
	Elective Subjects.		
Prof. Thayer	Constitutional Law. No text-book	1	
Prof. Keener	Agency and Carriers. No text-book	1	2
Prof. Gray	Wills and Administration. No text-book	1	6
Prof. Gray	Law of Persons. No text-book	1	4
Prof. Keener	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	5
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	1
	ORDINARY COURSE.		
	Elective Subjects.		
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction	2	16
Prof. Ames	Partnership and Corporations. Ames's Cases on Partnership	2	18
Prof. Langdell	Suretyship and Mortgage. No text-book	2	10
Prof. Thayer	Constitutional Law. No text-book	1	4
Prof. Keener	Agency and Carriers. No text-book	1	4
Prof. Gray	Wills and Administration. No text-book	1	16
Prof. Gray	Law of Persons. No text-book	1	15
Prof. Keener	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	8
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	5

The following table exhibits the number of students who, since the establishment of the three-years' course, have been examined for a degree in the studies of any year without having been members of the School during that year: —

Year.	1877–78.			1878–79.			1879–80.			1880–81.			1881–82.			1882–83.			1883–84.			1884–85.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
1st	5	2	3	3	2	1	6	4	2	6	4	2	2	1	1	3	3	0	7	6	1	3	2	1
2d							1	1	0															
3d							5	4	1	4	4	0	10	8	2	3	2	1	3	3	0	6	4	2

The following table exhibits the number of students who have entered the School in each year during the last fifteen years, and shows how many of them were graduates of colleges; and of the latter, how many were graduates of Harvard and how many of other colleges: —

	1870–71.	1871–72.	1872–73.	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.
Whole number of entries	105	92	87	95	102	119	128	111	102	124	91	97	84	86	101
Grad. of colleges	60	56	47	58	55	67	77	79	62	76	60	53	56	61	79
Harvard graduates	19	26	22	29	40	39	47	47	38	59	41	29	33	47	56
Graduates of other colleges	41	30	25	29	15	28	30	32	24	17	19	24	23	14	23
Non-graduates . .	45	36	40	37	47	52	51	32	40	48	31	44	28	25	22

C. C. LANGDELL, *Dean.*

To the President of the University: —

Sir, — As Dean of the Medical Faculty I have the honor to submit the following report upon the Medical School for the academic year 1884–85.

The work of the School has been carried on during the past year under very favorable conditions, the ample accommodations afforded by the new building being fully appreciated by both teachers and students. Certain changes in the construction of the building have been found necessary in order to secure the comfort and safety of those who occupy it.

The most important of these are the enlargement of the windows in the laboratories of pathology and histology, to secure better light for microscopic work; the reconstruction of the elevator; and the alteration of the heating apparatus of the chemical laboratory, so that the air-supply of this room is entirely distinct from that of the rest of the building, a change which it is hoped will prevent the penetration of the gases generated in the laboratory into other parts of the building.

In addition to the regular instruction to students, the amount and character of which is set forth in the appended tables, work deserving special mention has been done in various departments.

Anatomy. — Particular attention has been given to the Museum by the Anatomical Department. The series of thin sections illustrating the internal structure of bone in man and in several animals is approaching completion. It is believed to be a unique collection.. Experiments have been made in mounting frozen sections so that they can be shown to the best advantage, and it is hoped that the test of time will show that this problem has been solved. A series of bones handsomely prepared and mounted, with the origin and insertion of muscles marked by blue and red lines, has been added to the Museum.

Physiology. — In this department the professor and his assistant have continued their study of vaso-motor phenomena, and a large amount of material is now nearly ready for publication. Dr. F. W. Hooper carried on an experimental research on the respiratory functions of the human larynx, the results of which were embodied in a paper read before the American Laryngological Association, and published in the New York Medical Journal for July 4th, 1885. The result of an experimental study of a question bearing upon nature of nerve force was published by the professor of Physiology in the Journal of Physiology in May, 1885.

Chemistry. — In this department the work upon the localization of arsenic in the human body has been continued as cases of arsenical poisoning have been obtained. Investigations are also in progress upon the distribution of morphine in the body, its elimination, and the changes which it undergoes in cases of morphine poisoning. Quarterly examinations of the sources of the Boston water supply have been made under the auspices of the Boston Water Board.

Hygiene. — Dr. Charles Harrington, instructor in Hygiene, has made, under the auspices of the State Board of Health, Lunacy, and Charity, a study of the effects of disinfectants on lead-plumbing and an examination of American canned goods for metallic contaminations. He has also carried on an experimental research on the products of respiration.

Pathology. — In this department original work has been done by Mr. L. T. Stevens on the histology of the undescended testis, by Mr. C. L. Scudder on the earliest renal changes in scarlatina, and by Mr. E. K. Dunham on the structure of tumors.

Dr. J. C. Warren has during the past year continued his investigations into the changes occurring in arteries during the process of healing after ligature. Some of the results of this research have already been published in various medical periodicals, and the whole subject will soon be presented in the form of an illustrated monograph.

Dr. H. C. Ernst has, in coöperation with Dr. J. C. Warren, studied the bacteria associated with various forms of surgical disease, using for the purpose material obtained from the Massachusetts General Hospital.

Histology and Embryology. — During the past year the laboratory of this department has still further added to its equipment, and the number of pupils seeking instruction there is steadily increasing. The work outside the regular class was nearly double that of the previous year. Of first-year men nearly thirty took a special volunteer course. Three third-year men and two post-graduates carried on a special work in the laboratory. The original work of the department is represented by the following articles, published by Dr. C. S. Minot: —

Death and Individuality. *Science*, IV. 398.

The Formative Force of Organisms. *Science*, V. p. 4.

Zur Kenntniss der Samenblasen beim Meerschweinchen. *Archiv. f. mikroskopische Anatomie*, XXIV. 211.

The chapter on the Vermes in *Kingsley's Standard Natural History*, Vol. I. pp. 185–235.

Some Histological Methods. *American Naturalist*, 1885, 228 and 916.

The Early Stages of Human Development: Part I., Ova of the Second Week of Pregnancy. Part II., Embryos of the Third Week. *New York Medical Journal*, XLII. 197, 396, and 426. The articles: Age, Allantois, Ammion, Area embryonalis, Bioplasson, Blastoderm, and Blastopore, in *Wood's Reference Hand-Book of the Medical Sciences*, Vol. I. These articles contain original matter not published elsewhere.

In the autumn of 1878 the Faculty, acting under the conviction that a medical education as thorough as they desired to give could not be acquired in three years, established a voluntary fourth-year course, and provided that the diploma of a student taking this course should bear evidence that it had been given after a four years' course of study. As it was deemed impracticable to establish a compulsory four-years' course, it was necessary so to arrange the instruction that it would lead to the degree of M. D., either in three or four years, at the option of the student, a plan which was attended with no little inconvenience both to teachers and students.

The fourth-year course, as thus established, was regarded as an experiment to enable the Faculty to judge of the demand for the more advanced medical education which it had to offer, and the time is now near at hand when it will be necessary to decide whether the fourth-year course is to be abandoned or made compulsory. The following figures, showing the number of students taking this course each year since its establishment, will be of use in deciding this question.

Fourth-year Students.

1878–79	1	1882–83	10
1879–80	2	1883–84	12
1880–81	9	1884–85	16
1881–82	9	1885–86	18

It will thus be seen that the course has gained steadily in popularity since it was first established, and it is not too much to hope that, if it were now made compulsory, the additional fees thus obtained would more than compensate for the loss of those students who would seek elsewhere a diploma which could be more easily obtained.

The usual statistics relating to the School will be found in the following tables.

The whole number of students in attendance

During the year was	257
During the first term	254
During the second term	235

Of these 133 had literary or scientific degrees.

There were 67 applicants for the degree of Doctor of Medicine in the 3 years' course, of whom 11 were rejected.

There were 6 applicants for the degree of Doctor of Medicine in the 4 years' course, of whom 3 were rejected. Of the 3 students who received the degree, two received it *cum laude* and with it the degree of A.M.

The Fourth Class was composed of 16 students, 10 of whom postponed graduation.

The Scholarships were awarded as follows: —

1st Barringer Scholarship,	E. R. Merrill	4th Class.
2d " "	R. J. Allen	2d "
Faculty "	J. W. Perkins	3d "
" "	H. F. M. Smith	3d "
" "	W. T. Lord	2d "
" "	C. M. Whitney	2d "

TABLE I.—SHOWING THE AMOUNT AND CHARACTER OF INSTRUCTION.

COURSES OF INSTRUCTION FOR 1884–85.

Instructors.	Subjects.	Exercises per week.	No. of students examined.
	FIRST CLASS.		
Prof. Dwight	Descriptive Anatomy	Four.	92
Drs. M. H. Richardson, Otis, and Mixter	Practical Anatomy, with Exercises in Dissection	Five, January till May.	
Drs. C. S. Minot and Quincy	Laboratory Exercises in Histology	Two, till May.	
Dr. C. S. Minot	Embryology	Fifteen Lectures.	
Prof. Bowditch	Systematic and Experimental Physiology	Four.	89
Dr. J. W. Warren	Laboratory Exercises in Experimental Physiology	Novemer till May.	
Asst. Prof. Hills	General and Analytical Chemistry	Two, with ten additional Exercises	68
Asst. Prof. Hills, Drs. Emerson and Harrington	Practical Exercises in the Laboratory for General Chemistry	Six.	
Dr. Harrington	Hygiene	Twelve Lectures and twelve Demonstrations.	
Dr. F. H. Williams	Materia Medica with Practical Demonstrations	Two, second half-year.	80
	SECOND CLASS.		
Prof. Dwight	Topographical and Advanced Anatomy	One.	70
Drs. M. H. Richardson, Otis, and Mixter	Practical Anatomy with Exercises in Dissection	Five, till May.	
Prof. Wood	Medical and Toxicological Chemistry	Two.	69
Prof. Wood, and Drs. Emerson and Harrington	Practical Exercises in Laboratory for Medical Chemistry	Six.	
Dr. F. H. Williams	Materia Medica, with Practical Demonstrations	Two, second half-year.	69
Prof. Fitz	General Pathology and Pathological Anatomy	Two.	69

	SECOND CLASS — CONTINUED.		
Prof. Fitz	Special Pathological Anatomy, with Demonstrations	Two.	
Drs. Whitney and Gannett	Laboratory Exercises in Pathological Histology	Two.	
Prof. Fitz and Dr. Gannett	Practical Instruction in Performing Autopsies	Throughout the year.	
Prof. Edes and Asst. Prof. Whittier	Clinical Medicine	Four.	
Drs. Cutler, Garland, and Gannett	Practical Instruction in Auscultation and Percussion	Six, first half-year.	
Dr. F. C. Shattuck	Recitations in Theory and Practice	Two.	
Asst. Prof. Knight	Practical Diagnosis and Treatment of Diseases of the Larynx	Six, first half-year.	
Asst. Prof. Warren	Recitations in Surgical Pathology and Surgery	One.	
Dr. West	The Application of Bandages and Apparatus	One, second half-year.	
Prof. Cheever	Clinical Surgery	Two, till April.	
Asst. Prof. Porter	Clinical Surgery	Two.	
	THIRD CLASS.		
Prof. Edes	Therapeutics	Three.	48
Prof. Reynolds	Theory and Practice of Obstetrics	Three.	58
Asst. Prof. W. L. Richardson	Recitations in the Theory and Practice of Obstetrics	One.	
Asst. Prof. W. L. Richardson	Operative Obstetrics	Twelve practical Exercises.	
Asst. Prof. W. L. Richardson and Dr. C. M. Green	Practical Instruction in Clinical Obstetrics	Throughout the year.	
Prof. Minot and Asst. Prof. Whittier	Theory and Practice of Physic	Five.	61
Prof. Edes and Asst. Prof. Whittier	Clinical Medicine	Four.	60
Prof. Cheever	Surgery and Clinical Surgery	Two, first half-year.	63
Prof. Cheever	Clinical Surgery	Two, till April.	62
Asst. Prof. Porter	Surgical Anatomy and Operative Surgery	Twice a week in March and April.	

COURSES OF INSTRUCTION FOR 1884–85 — CONTINUED.

	THIRD CLASS — CONTINUED.	
Asst. Prof. Porter and Dr. Otis	Operative Surgery	Fifteen practical Exercises.
Prof. Williams	Diseases of the Eye	Two, first half-year.
Prof. Williams	Clinical Ophthalmology	One, till January and after March.
Prof. White	Diseases of the Skin	One.
Prof. White	Clinical Dermatology	One.
Asst. Prof. Baker	Gynaecology	Two.
Asst. Prof. Baker	Clinical Gynaecology	Two, first half-year.
Dr. Davenport	Clinical Gynaecology	Two, first half-year.
Dr. Greenough	Practical Diagnosis and Treatment of Syphilis	One.
Dr. J. O. Green	Practical Diagnosis and Treatment of Diseases of the Ear	One, January till April.
Dr. Blake	Anatomy, Physiology, and Diseases of the Ear	Two, for three months.
Dr. Oliver	Practical Diagnosis and Treatment of Diseases of Children	One, first half-year.
Dr. Rotch	Practical Diagnosis and Treatment of Diseases of Children	One, for six months.
Dr. Webber	Practical Diagnosis and Treatment of Diseases of the Nervous System	One, till February.
Dr. Putnam	Practical Diagnosis and Treatment of Diseases of the Nervous System	One, after January.
Asst. Prof. Folsom	Mental Diseases	Eight Lectures.
Asst. Prof. Draper	Legal Medicine, with Demonstrations	Twelve Exercises.
Dr. J. W. Warren	Experimental Therapeutics	Two.
	FOURTH CLASS.	
Dr. Draper	Clinical Medicine	One.
Dr. Garland	Clinical Medicine	One.
Asst. Prof. Whittier	Clinical Medicine	One, for three months.

FOURTH CLASS — Continued.

Asst. Prof. Warren	Clinical Surgery	One, till February.	
Asst. Prof. Porter	Clinical Surgery	One, after January.	
Asst. Prof. Porter and Dr. Otis	Operative Surgery	Practical Exercises.	8
Dr. Bradford	Orthopedic Surgery	Two, three months.	
Asst. Prof. W. L. Richardson	Clinical Obstetrics	Two, for six months.	9
	Operative Obstetrics	Practical Exercises.	
Prof. Williams	Clinical Ophthalmoscopy	Two, for six months.	7
Dr. Wadsworth	Ophthalmoscopy	One, for four months.	
Prof. White	Dermatology	One.	6
Prof. White	Clinical Dermatology	Three.	
Asst. Prof. Baker and Dr. Davenport	Clinical and Operative Gynaecology	Six.	7
Dr. Chadwick	Clinical Gynaecology	Three.	
Drs. Oliver and Rotch	Diseases of Children	Three.	8
Drs. Putnam and Webber	Diseases of the Nervous System	Two.	6
Asst. Prof. Folsom	Mental Diseases	One.	6
Asst. Prof. Knight	Laryngology	Three, for two months.	6
Dr. Blake	Otology	Two, for three months.	8
Dr. J. O. Green	Otology	Two, for three months.	
Asst. Prof. Draper	Legal Medicine	One.	8
Dr. Harris	Legal Medicine	Demonstrations.	
Dr. Greenough	Syphilis	Two.	8
Dr. Homans	Ovarian Tumors	Six Lectures; Clinical Exercises.	
Dr. Durgin	Hygiene	Twelve Lectures.	
Boston Cooking School	Cookery		

TABLE II.—JUNE EXAMINATIONS.

		First Class and Second Class.														Third Class.											
		Anatomy.		Physiology.		General Chemistry.		Medical Chemistry.		Materia Medica.		Path. Anatomy.		Topo. Anatomy.		Theory and Practice.		Clinical Medicine.		Surgery.		Clinical Surgery.		Therapeutics.		Obstetrics.	
			%		%		%		%		%		%		%		%		%		%		%		%		%
1882	Passed	60		62		38		64		46		54		52		74		82		82		80		64		69	
	Rejected	10	14	13	17	10	20	7	9	15	24	11	16	3	5	9	10	5	5	2	2	3	3	5	7	15	17
	Total	70		75		48		71		61		65		55		83		87		84		83		69		84	
1883	Passed	63		62		53		62		64		62		69		60		58		57		61		69		59	
	Rejected	8	11	12	16	7	12	7	10	11	15	11	15	6	8	5	8	2	3	5	8	0	0	9	11	6	9
	Total	71		74		60		69		75		73		75		65		60		62		61		78		65	
1884	Passed	54		65		46		63		63		56		59		53		58		58		58		55		60	
	Rejected	19	26	22	25	16	25	12	16	10	13	14	20	8	12	14	2	6	9	7	10	1	2	6	10	12	16
	Total	73		87		62		75		73		70		67		67		64		65		59		61		72	
1885	Passed	69		75		51		62		125		63		59		52		59		58		62		33		52	
	Rejected	23	25	14	18	12	19	7	10	24	16	6	8	11	15	9	14	1	1	5	8	0	0	15	6	6	10
	Total	92		89		63		69		149		69		70		61		60		63		62		48		58	

Fourth Class.

		Ophthalmology.		Dermatology.		Gynaecology.		Obstetrics.		Clinical and Operative Obstetrics.		Diseases of Children.		Diseases of Nervous System.		Mental Diseases.		Legal Medicine.		Otology.		Laryngology.		Syphilis.		Operative Surgery.	
1882	Passed	7		7		7		6		6		7		6		6		7		8		7		7		8	
	Rejected	1	12	0	0	0	0	1	14	1	14	0	0	1	14	1	14	0	0	0	0	0	0	0	0	0	0
	Total	8		7		7		7		7		7		7		7		7		8		7		7		8	
1883	Passed	4		4		5				5		5		3		3		4		5		5		5		9	
	Rejected	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	4		4		5				5		5		3		3		4		5		5		5		9	
1884	Passed	8		8		8				8		9		7		9		9		8		8		9		8	
	Rejected	1	11	1	11	1	11			1	11	0	0	2	22	0	0	0	0	1	11	1	11	0	0	1	11
	Total	9		9		9				9		9		9		9		9		9		9		9		9	
1885	Passed	7		6		6				6		8		2		5		8		8		8		8		5	
	Rejected	0	0	0	0	1	16			3	33	0	0	4	66	1	2	0	0	0	0	0	0	0	0	3	37
	Total	7		6		7				9		8		6		6		8		8		8		8		8	

TABLE III. — SHOWING NUMBER OF TERMS SPENT AT THE SCHOOL BY GRADUATES.

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Spent six terms .	25 69%	40 65%	41 85%	62 88%	39 86%	49 81%	79 91%	67 88%	57 96%	63 89%
Spent five terms .	5 1%	9 15%	4 8%	2 2%	1 2%	6 10%	2 2%	4 5%	0	3 4%
Spent four terms .	4 11%	8 14%	3 6%	3 4%	4 8%	4 6%	4 4%	4 5%	2 3%	4 5%
Spent three terms .	2 5%	1 1%	0	2 2%	0	1 1%	0	1 1%	0	0
Spent two terms .	0	3 5%	0	1 1%	1 2%	0	1 1%	0	0	1 1%
Total graduated .	36	61	48	70	45	60	86[1]	76[2]	59[3]	78[4]

[1] Includes nine students of the Fourth Class.
[2] Includes six students of the Fourth Class.
[3] Includes nine students of the Fourth Class.
[4] Includes three students of the Fourth Class.

TABLE IV. — STATISTICS OF EXAMINATIONS.

EXAMINATIONS FOR ADMISSION.

			Physics.	Latin.	English.	Elective.	Rejected.
1885.	June	Offered . .	18	18	18	18	1
		Conditioned	4	5	6	1	
	Sept.	Offered . .	20	21	20	20	2
		Conditioned	7	8	5	1	

H. P. BOWDITCH, *Dean.*

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — As Dean of the Dental Faculty I have the honor to submit the following report upon the Dental School for the academic year 1884–85: —

The number of students was thirty-five, divided as follows: First-year fourteen, second-year eleven, third-year ten. The usual course has been pursued in the studies as indicated in previous reports. Lectures have been given by professors and instructors on the subjects of Anatomy, Physiology, General Chemistry, Surgery, Dental Therapeutics, and Materia Medica, Operative and Mechanical Dentistry, Orthodontia, the Mechanical Treatment of Cleft Palates, and Oral Anatomy and Pathology. Examinations have been held in all these subjects. In Anatomy fifteen went up, of whom nine passed. In Physiology fourteen went up and nine passed. In General Chemistry out of fifteen who tried the examination only one failed to pass. These are the studies of the first-year class who attend the instruction of the medical professors in these subjects, and pass their examinations with the first-year medical class. Students are obliged to pass these first-year examinations before they can pass on to the next year's work. This process weeds out the inefficient and the dull, leaving the better part of the class to go on, and ensures a better result for the examinations of the succeeding year. Eleven tried the examinations in Surgical Pathology; ten passed. Eleven were examined in Therapeutics, which includes Materia Medica; nine passed. Nine were examined in Operative Dentistry; all passed. Ten were examined in Mechanical Dentistry, and all passed. In Oral Pathology and Anatomy ten were examined; nine passed.

The subject of Orthodontia is included in Operative Dentistry, and the Treatment of Cleft Palates in Mechanical Dentistry. Besides the lectures the students work at practical dentistry in the operative and mechanical infirmaries, performing every operation known to dentists, obtaining patients from those who are willing to put themselves into the hands of students for the sake of having their work done at nominal prices. Of this class the supply has never failed, and students have ample opportunities to obtain by practical work the skill necessary to the practice of their profession. In the operative department they are guided and instructed by skilled dentists, who attend in turn every afternoon during the School year. The demonstrator in charge has the general oversight of the students, the assignment of patients, the enforcement of discipline, and also gives such clinical instruction as is needed to supplement that of the other instructors, especially in extracting teeth, which falls to his sole charge. The demonstrator also gives the greater part of the instruction in the Mechanical department, looking out for the supply of materials, furnishing them to the students, keeping all accounts, and performing such other duties as may be required.

The number of graduates at the Commencement in June was eight.

The fees of the students are all that the School has to depend upon for its support; and were it not for the hospitality of the Medical Faculty in furnishing it with rooms free of rent the School could hardly be maintained. Without the generous aid also of the Alumni of the School, who have given their services either gratuitously or for the merest nominal salaries, the efforts to sustain the School would have been vain. In this state of things instructor after instructor declines a re-election on account of the increasing pressure of his business, and the School loses its experienced teachers.

The subscription attempted some years ago to raise the small sum of $30,000 did not succeed, only $100 having been received. A subscription was subsequently started among the Alumni, each subscriber to contribute $100 in five yearly payments. This has reached the amount of $1715.85, a large if not the principal portion of which has been given by instructors, either past or present, in the School, who had already given of valuable time and services a much larger amount to support a cause in which they were interested and in which they believed. The infirmaries connected with the School, and which are parts of its machinery, are as much charities as the dispensaries or the hospitals, and as deserving of support. It would seem, therefore, that only ignorance of its existence or a low estimation of the value of the services it renders, prevents it from receiving its share with other charities. The School has undoubtedly raised the standard of the dental profession in New England; but for eighteen years it has been allowed to struggle along without endowment, depending on the charity of its teachers, the Medical Faculty and its Alumni.

Dr. Eben F. Whitman, Instructor in Operative Dentistry, and Dr. J. Weatherhead Warren, Instructor in Oral Pathology and Anatomy, at the end of the year declined a re-election on account of the increasing pressure of their business.

In the Operative department clinics were performed during the term before the students by the following gentlemen: —

Dr. George F. Ames, of Providence, R. I.
Dr. J. F. Adams, of Worcester.
Dr. A. W. Buckland, of Pawtucket.
Dr. G. C. Daboll, of Buffalo, N. Y.
Dr. G. A. Young, of Concord, N. H.
Dr. G. E. Ainsworth, of Boston.
Dr. J. T. Codman, of Boston.
Dr. Dwight M. Clapp, of Boston.
Dr. E. G. Leach, of Boston.
Dr. E. S. Niles, of Boston.

THOMAS H. CHANDLER, *Dean*.

To the President of the University:

Sir, — I respectfully submit the following report of the Lawrence Scientific School for the year 1884–85: —

The number of students registered during the year was twenty-nine.

	1884–85.	Average for 8 previous years.
I. Engineering	8	7
II. Chemistry	3	1
III. Natural History	5	5
IV. Mathematics	0	1
Regular Students	16	14
Special Students	13	11½
Total	29	25½

These students attended the exercises of thirty-four different instructors. The whole number of courses taken, prescribed and elective, was one hundred and thirty-eight; an average of four and three quarters to each pupil.

The distribution of studies is shown by the following statement:—

Chemistry	29	Mechanical Drawing	8
English	5	Music	1
Fine Arts	4	Natural History	31
French	3	Philosophy	2
German	12	Political Economy	5
History	5	Physics	9
Mathematics	14	Spanish	1
Mechanics	4	Surveying	5
			138

The Faculty took decided action to get rid of students who were not doing faithful work, and eight withdrew from the School. One other withdrew on account of ill-health, and another was unable to take the examinations for the same reason. The remaining nineteen passed satisfactorily in eighty-two studies, an average of four and three tenths for each student; and failed in seven studies where they took examinations.

Four students received the degree of Civil Engineer at Commencement. Two former students were recommended for the degree of Bachelor of Science (out of course), but by accident one recommendation was mislaid, and only one of the two degrees was given at Commencement.

By slow degrees the courses of the Scientific School have been opened to College students and put into the list of College electives, until now only a part of the technical Civil Engineering courses are left out of that list.

They are given below as a supplement to the corresponding table in the report of the Dean of the College.

These courses are open to College students and can be taken by them as regular elective courses, with the exception of 2d and 3d year Mechanical Drawing, which can only be taken as extra courses.

Although this broadening of the courses open to College students has greatly increased the amount and improved the quality of the scientific work done in the University, it has in one way caused an apparent decrease of interest in scientific studies, by drawing students from the Scientific School to the College, and so reducing the numbers of the School.

As Professor Eustis suggested a few years ago, this change of the College course allows a student to take his preparatory theoretical

SCIENTIFIC SCHOOL STUDIES.

NOT INCLUDED IN THE LIST OF COLLEGE STUDIES.

Instructors.	Courses of Instruction.	Hours per week.	Students.	Total number of Students.
Prof. Eustis	3d year; Mechanics (counting as two courses)	5	Omitted in 1884–85.	
Prof. Eustis and Mr. Hill	4th year; Applied Mechanics (counting as two courses)	5	4 Sci.	4
Prof. Eustis	4th year; Applications of Descriptive Geometry (counting as a full course)	3	Omitted in 1884–85.	
Mr. Knapp	Land Surveying and Levelling (counting as a full course)	6	2 Sci., 3 So., 1 Se.	6
Mr. Knapp	Railroad and Higher Surveying (counting as a full course)	6	1 Sci., 1 Ju., 1 Gr.	3
Mr. Knapp	1st, 2d, and 3d year; Mechanical Drawing (counting each as a half-course)	6	5 Sci., 3 So., 2 Ju.	10

work and a small part of his technical work as an undergraduate, and then enter the Scientific School as an advanced student. In the Civil Engineering Department one of the students who graduated this year, after one year's attendance at the School, had taken all of his Mathematics and Mechanics while a College undergraduate; and a number of College students who are taking Civil Engineering courses propose to get the Scientific School degree after graduation from the College.

The work of revising the general courses of study was begun by the Faculty. One object was to make the courses correspond with the College requirements, since now, with hardly any exceptions, Scientific students take their entrance examinations and all of their studies with College undergraduates or members of the Graduate Department. Another object was to allow each student a greater choice of studies in his department.

F. B. KNAPP, *Secretary*.

To the President of the University:

Sir, — I respectfully submit the following report upon the Bussey Institution for the year 1884–85: —

Instruction was given as usual in Agriculture, Horticulture, and Agricultural Chemistry by the regular instructors of these subjects, Messrs. Motley, B. M. Watson, and Storer; and in Botany by Mr. N. T. Kidder, and Anatomy by Mr. D. T. Hinckley, both of whom did excellent service as volunteers without compensation.

Twelve students were in attendance, one of whom received the degree of Bachelor of Agricultural Science at Commencement and one the degree of Master of Arts. Five of the students took the regular course of instruction, four devoted themselves particularly to Horticulture, and the other three attended a special course of lectures on trees and shrubs that was given by Mr. Watson. It is worthy of remark that several of the students were young men specially interested in landscape gardening. They regarded the instruction in Horticulture, and especially the lectures upon trees, as means of fitting themselves to practise that profession.

From the character of the courses of instruction chosen by this unusually large number of students, it became plainer than it had been even in the previous year that the establishment of the Veterinary School of the University has permanently deprived the Bussey Institution of a certain number of students. Formerly the course in Applied Zoölogy at the Bussey Institution was attended almost every year by two or three young men specially interested in domestic animals, but having no wish or intention to become veterinary practitioners. Students of this character are now naturally attracted to the Veterinary School, — possibly to their own advantage. The matter is worthy of comment because it enforces the fact that, with the establishment of the Veterinary School, the old relations of the Bussey Institution in respect to Applied Zoölogy have undergone change. Less time and emphasis need to be given to this subject now than was proper and desirable formerly.

As in the previous year, the Farm was managed by Superintendent Hinckley with the result that the receipts from eighty-eight animals taken to board, together with those derived from the sale of farm products, paid for the costs of conducting this particular branch of the Institution.

Gifts of books were received from Messrs. Edward Corlis and William Peters, of Jamaica Plain; of agricultural papers, anatomical preparations, and specimens from Dr. C. A. Cheever, of Mattapan; of a horse from Joseph S. Lovering, Esq., of Boston; and of a large series of standard samples of grains from Mr. R. H. Jenkins, Chief Inspector of Grain, through Mr. J. P. Fenno.

F. H. STORER, *Dean*.

To THE PRESIDENT OF THE UNIVERSITY:

SIR, — I beg to submit herewith the third annual report of the School of Veterinary Medicine: —

Of the students composing the most advanced, i. e. the second class, eight presented themselves for examination; of these, four were successful in all, and four in all but one of the subjects.

Of the ten students composing the new, i. e. the first class, all went up for examination; of these, nine passed in all, and one failed in all of the subjects.

At the admission examination eleven candidates presented themselves; of these, ten were accepted: nine for the first and one for the third class. Thus there are now in the School twenty-seven students: ten in the third, eight in the second, and nine in the first class, — a number which is felt to be quite satisfactory, and perhaps more particularly so because of the usually good preliminary educational advantages these students have had, several of them being graduates of colleges and scientific schools. The markedly greater success obtained by the class of the second year at their first professional examination, as compared with that of the original first class, is in my opinion due to the fact of the establishment of the necessary lecture and dissecting-rooms in connection with the other Village Street property, and the consequent saving of time which before had been consumed in going to and fro between Boston and Forest Hills (the Bussey Institution).

During the past year the instruction in Histology was very satisfactorily given by Mr. Dexter, whose temporary removal from Boston has obliged him to resign the position of instructor. During the ensuing year the course will be in the charge of Mr. E. K. Dunham, who comes especially well prepared for the work.

As the School has now entered upon its third year, the subjects in completion of its proposed course of study have been added to those of the previous years. These additional lectures are upon Parasites and Parasitic diseases: Opthalmology, Bacteriology, Surgical Pathology, Operative Surgery, and Obstetrics. In addition to this further elaboration of the more theoretical division of the studies, the time is now so arranged that students of the third class will act in rotation as visitors, surgical dressers, dispensing pharmacists, and the like —

in fact, actually perform all the duties of the practicing veterinary surgeon, and, so far as may be, in a way which will fit them for the every day life of the profession, rather than simply for the performances of a round of hospital duties. Besides this there is to be a course in practical farriery, by which it is expected that the student will be taught sufficient of this art to enable him not only to intelligently direct the ordinary horse-shoer, but, should occasion require, to make and put on such treatment-shoes as hé may deem necessary.

As a teaching institution it may now perhaps be said that with the addition of two or three veterinarians to its staff, which it is hoped that its own graduates will supply the coming year, the School is at once ready to take and hold a leading place among institutions of the sort. But before it can be expected to fill the entire field of its usefulness — in the way of biological research, and in the discovery of means to prevent the extension of communicable and preventable diseases among animals, and from animals to mankind — some of its officers must be freed from the necessity of maintaining themselves by private practice.

For the twelve months ending October 31, 1885, 1393 different animals were treated at the Hospital. Of these, 580 were "outdoor" cases, 47 were sent to the Bussey Farm, and 766 were boarding patients at the Village Street buildings. Of these last there were 531 horses, 230 dogs, 4 cats, and 1 calf. Besides these, as last year, a considerable number of horses have been shod in the Forge, to which the attention of one or the other of the veterinary officers has been given, and of which no record has been kept, and numbers of boarding patients have received treatment while in hospital for more than one ailment; but in no instance has an animal been counted more than once in making up the total number treated. Notwithstanding the increased accommodation afforded by the additional building, which was ready for occupancy in January last, the Hospital has been full for the greater portion of the time, and upon several occasions it has been necessary to turn away applicants for admission to the wards.

During the past year the School has been thrown entirely upon its own earning capacity for its income; that is to say, while in the year previous it had the advantage of the gifts of $2000 from the Trustees of the Society for Promoting Agriculture, and of $500 from Mr. Higginson, which could be added to its earned income, it has this year had the benefit of no such advantage from any source. Notwithstanding this, and the fact that its expenses both for instruction and interest on cost of new building have been very materially added to, the opinion expressed in the last report that the additional hospital accommodation would probably pay this increased charge, has been fully justified by the eight months of trial; for during that time the earnings have exceeded those of the previous year by $2995.23.

Experience has shown that the so-called "subscription plan" which was started in connection with the Hospital at the time of the opening of the School, and modelled on a similar plan existing at the Royal Veterinary College in London, has not accomplished the object hoped from it, and it is recommended, that with us, the plan be discontinued after June 1st next, when the existing contracts will end.

CHARLES P. LYMAN, *Secretary.*

To the President of the University:

Sir, — Three numbers of the *Bulletin of Harvard University* have been issued under the immediate charge of the Librarian during the past year, and the cost of them has been shared in part by the same kind friends who have been helpful in this respect in former years. These are Messrs. Charles P. Curtis, William B. Weeden, Henry Lee, Alexander Agassiz, and Charles S. Sargent. Of the *Bibliographical Contributions*, also issued separately by the Library, but one has been published, namely, Part I. of the *Dante Collections in the Harvard College and Boston Public Libraries.* This has been prepared by Mr. William C. Lane, the head of the Catalogue department, and is confined to the works of Dante in the two libraries. The Dantesque literature of our own Library has been materially increased of late through the annual appropriations of the Dante Society and the contributions of Professor Norton from his own abundant collection. The *Kohl Collection of Early Maps* has been continued; and a new serial begun in the *Bulletin.* This last is a *Classified Index to the Maps contained in the Publications of the Royal Geographical Society and in Associated Serials*, by Richard Bliss of the Redwood Library at Newport, R. I.

The accessions to the University Library for the year, and the present extent of the various departments, are as follows: —

Departments.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) .	12,442	232,783	224,935
Law School	680	21,548	2,916
Scientific School	70	2,535	400
Divinity School	124	17,410	2,288
Medical School	. .	1,500	. . .
Museum of Zoölogy	882	17,549	10,706
Astronomical Observatory . .	67	3,300	6,160
Botanic Garden	144	4,626	3,128
Bussey Institution	80	2,707	855
Peabody Museum	69	795	994
Totals	14,558	304,753	252,382

Through the death of the late Professor Ezra Abbot, and the good will of Mrs. Abbot, almost 4000 volumes of his private library, — a collection uncommonly free from inferior books, — have come to the University Library. These volumes are not included in the count of volumes given above. They have all been roughly catalogued, and those that are duplicates of books both in the Gore Hall and Divinity Hall collections have been taken out; but no final disposition of the volumes — except a small portion taken to Divinity Hall for current use — can be made until a new library building for that Hall is provided. Meanwhile the books are shelved as conveniently as is possible in the Newspaper Room of Gore Hall.

The Dean of the Medical School reports upon the library of that department as follows: —

> "The Medical School Library as it formerly existed has been broken up. Most of the books have been sent to the Medical Library in Boylston Place. Those which have been considered valuable as works of reference in the various branches of medical science have been distributed through the different departments and, together with books belonging to the professors, form working libraries in the laboratories of the School. There is a students' library containing 150 volumes, open freely to the students. There are also some 500 volumes which, for various reasons, it has not been thought best to dispose of in any of the above ways and which are kept in the School, but are neither catalogued nor used. We subscribe to 25 medical journals for use in the students' and working libraries."

The Whitney Library of Geology, a component part of the collection in the Museum of Zoölogy, is not yet included in the count of the Museum Library; while on the other hand no deduction has been made for volumes parted with on exchange account.

A total rectification of the figures of the Gore Hall collections can only be effected when the entire library is reclassified, so that an actual count can be made. Of the accessions to these collections, there were added by gift 4822 volumes and 9216 pamphlets; and such accessions also include 560 volumes of bound serials (received in parts), and 1000 volumes made by binding pamphlets.

The accessions of recent years to the University Library have been reported as follows: —

In 1878	9,933 vols.	In 1882	9,192 vols.
" 1879	10,389 "	" 1883	9,818 "
" 1880	7,247 "	" 1884	12,360 "
" 1881	9,804 "	" 1885	14,558 "

It will thus be seen that the accessions of the past year have been considerably in excess of those of any previous year since the College Library, with those of the departments, has been made to constitute what is known as the University Library.

There were two conspicuous gifts of choice books during the year. One, a collection of 108 volumes, came from the heirs of George Ticknor, Smith Professor of Belles-Lettres from 1816 to 1835, and included the books by and upon John Milton, which had made a part of his library. The collection is rich in original editions of Milton's prose and poetical works. The other was a collection of 688 volumes and 113 pamphlets which had been gathered by Professor James Russell Lowell during his terms as Minister of the United States at Madrid and London, and was of a character to increase materially the scholarly resources of certain precious departments of the Library.

The following tables show the use of books at Gore Hall in 1884–85 as compared with previous years: —

	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.
1. Books lent out . .	41,296	41,986	45,481	48,194	48,231	48,655	52,322
2. Used in the building	10,921	7,812	11,724	10,498	8,654	9,047	9,433
3. Overnight use of reserved books .	7,519	10,506	11,872	12,891	12,678	11,399	13,791
Total (excluding No. 3, which is incl. in No. 1)	52,217	49,798	57,205	58,692	56,885	57,702	61,755
Officers of instruction reserving books .	. .	35	38	41	44	48	48
No. of books reserved	. .	3,330	3,418	4,251	4,316	4,782	5,230

The increase in the number of books reserved — of whose hall-use no record is kept — has a tendency to decrease the number of volumes used in the building, of whose use record is made.

Of the 866 books sent to the "Annex" during the year, 266 were from the class of "reserved books."

SUNDAY USE.

	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.
Number of Sundays open . . .	37	36	36	36	37
Persons using	1,846	2,067	2,268	2,448	2,631
Average	46	57	63	68	71
Highest number	64	91	92	95	105

It will also be seen by the following tables that the use of "Admission-Cards," by which students have access for investigation to special classes of the books at the shelves, is steadily gaining in favor, judging from the increased frequency of such use: —

ADMISSION–CARDS.

	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.
History	. .	31	49	46	45	52
Science	. .	14	26	16	18	12
Art (including Music)	. .	12	22	14	12	14
Literature	. .	12	36	42	37	42
Classics	. .	5	49	36	42	53
Philosophy	. .	5	6	5	6	8
Theology	. .	4	4	3	8	9
Political Economy . .	. .	2	8	5	8	12
Total students	60	85	200	167	176	202
Times of use	340	870	2,542	3,340	3,520	4,020

There was no record of the classification of use preserved for the first year of trial of the system.

The College teachers who have students under instruction in the methods of research are given such facilities as the Library building affords for the accommodation of their classes; but the advantages of the building are in this direction far from what they should be.

STUDENTS' USE OF THE LIBRARY.

	1874-75.		1879-80.		1883-84.		1884-85.	
Students of	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.
Divinity	20	16	23	23	21	21	26	26
Law	139	63	165	119	146	118	153	122
Scientific	29	21	16	15	26	17	28	21
Resident Graduates	55	18	66	40	68	51	70	52
Senior Class	152	109	171	151	209	188	191	170
Junior Class	159	96	201	168	195	171	234	216
Sophomore Class	208	124	196	163	248	210	256	220
Freshman Class	197	108	245	160	253	202	255	205
Totals	959	555	1083	839	1166	978	1218	1032

The percentage of users among the undergraduates has risen during the same time, as follows: —

	1874-75.	1879-80.	1883-84.	1884-85.
For Seniors	71	88	90	90
For Juniors	60	83	88	93
For Sophomores . . .	59	83	85	86
For Freshmen	54	65	80	80

The result is this: Ten years ago 57% of the students, and during the past year 85% used the Library.

These statements do not cover the use of "reserved books" — a system not in use in 1874-75, — a considerable number of the users of which never take other books from the Library.

Mr. Frank Carney, who under Mr. Tillinghast has charge of the shelves, reports that 4953 volumes have been permanently placed in the new stack since the last report, making 91,882 so placed out of the 232,783 volumes constituting the Gore Hall collection.

Mr. Lane furnishes the following figures about the work of the Catalogue department: The total number of titles catalogued for the year (1884-85) has been 15,522. If we divide this between recent accessions and those previous to 1860 (the latter we call "old work," being recataloguing of accessions received before the beginning of the present Catalogue system) we have 11,802 for new work and 3720 for old work. If we divide the sum total (15,522) between the established full-form catalogue-work and short work, or the briefer method employed on less important titles, we have for full work 9873 titles, and for short work 5649 titles.

In addition to these 15,522 titles which have passed into the Gore Hall Catalogue, there have been 848 titles catalogued of books received for the departmental libraries, of which a duplicate set of cards has been sent to the department, while 702 volumes have been recorded here as added to other departmental libraries which do not require the duplicate cards.

The present year's work may be compared with other years as follows: —

	1881–82.	1882–83.	1883–84.	1884–85.
Gore Hall Cards written	18,235	17,015	21,524	30,968
Do. distributed in card catalogue	34,168	29,480	40,542	55,235
Department Volumes catalogued	1,354	1,659	1,825	1,625
Volumes received in Gore Hall	6,848	8,441	9,879	12,442
Pamphlets " " " "	4,469	7,650	8,792	9,838
Approximate hours' work . . .	15,334	16,908	26,221	24,211

Some careful estimates which Mr. Lane has made, the details of which we may omit here, lead him to report "that 44% more work (if we judge from the cards written), or 41% more work (if we judge from the total number of volumes catalogued), has been done than in the previous year, in 7.6% less time (by hours) and at nearly 10% less cost, while 26% more books were received." Mr. Lane's results also show that from the gradual reorganization of the department and its methods there have been in the year just closed as compared with 1881–82, 174% more volumes catalogued, while the cost had increased but 11%. We are beginning to feel the effect of longer-trained labor as well as the results of new methods; and moreover to experience some dimunition of cost by new distributions of labor. The efficiency of the Catalogue staff is not yet equal to the disposal of all books received of late years, but the arrears of undone work (accumulated in recent years) has been reduced to 4062 volumes, which were received as follows: 131 in 1880 and earlier; 272 in 1881; 574 in 1882; 547 in 1883; 498 in 1884; and 2040 in 1885.

Mr. Lane has also made a careful computation of the present extent of the public card catalogue, which is contained in 590 drawers, in which the cards as pressed together have a linear measure of 645 feet. The cards of the author catalogue number (by our estimate of measure) 244,345; those of the subject catalogue 303,250; making a total of 547,595 cards. These are being increased at the present rate by 30,000 a year. It is not expected that the present capacity of the authors' catalogue will suffice beyond the close of the year 1885–86. That of the subject catalogue may be sufficient for a few more years. The question then of an increase of capacity in the cases is one needing a speedy solution.

Mr. Tillinghast, the head of the Ordering department, has made an unusually elaborate and instructive report upon the work and condition of his share of the Library service. I can make but a brief abstract of some of the more important points of his statement.

The total appropriation by the Library Council during the past year, including of periodicals however only such as were ordered for the first time, and not including the purchases on account of the Dante fund and of the departmental libraries, was $14,500. Against this sum the estimated amount of orders sent during the past and present years, for which we were liable, was $20,839. At the end of the year, or rather November 1, 1885, about half these orders in amount of estimated cost were unfilled, being nearly equally divided between "continuations" (or books which are received in parts) and other books. These figures are estimates made at the time of ordering and not actual cost derived from invoices; but our experience teaches us that it is safe to charge books at their retail prices, the cost of binding being about equal in the long run to the discounts which we obtain.

The heaviest work of the year comes in November, when 822 order slips were received by the Ordering department; the lightest in August, when 99 were received. The total orders for the year were 4385, of which 848 proved to be for books already in the Library. When the persons writing order-slips add *haste* to their entries, the orders are sent the same day. If there is not such urgency, the average delay arising from intervening work in despatching orders is about three days. There were on November 1, 1885, about 1400 deferred orders on hand, there existing some reason for not ordering.

If we examine the list of orders now unfilled in agents' hands, being 2268 in all, excluding continuations, we shall find that a few of these have been on our list since 1873 and nearly 9% were first ordered before 1881, and it is for this last-named year that the unfilled orders first reach the extent of 100. About a quarter of our orders were first sent out before 1883. The older orders have been several times reordered, and have been likewise changed from one agent to another.

The professors in their several departments almost always send in orders in excess of their appropriation, ranging from an excess of 6% for Ethics to one of 196% for Folk Lore. These excesses rarely cause embarrassment, for the proportion of books on outstanding orders which come in response to orders sent the same year, rarely ever amount in cost to over one half of the appropriation, and if the orders of back years carry the amount to excess it is met by the sum given to the Librarian for a reserve to meet this and other exigencies. It would seem that those departments of learning having the largest appropriations are the most liable to produce an excess of orders, as for example when an appropriation is under $200 the excess averages 43% ; if over $400, the excess becomes 80%. On the other hand, when there is more than one person privileged to order against an appropriation the tendency to exceed diminishes with the increase in the number of persons ordering on such single appropriation.

Periodicals cost about 15% of the total appropriations for the year. We have beside 1536 "continuations" on our list, and during the year in 710 cases one or more parts of such continuations were received.

There is a very heavy demand on our funds for these continuations. Of the total sum devoted to polite literature 16% is spent on the "continuations" of that branch; to Fine Arts 41% ; to Greek 42% ; to Modern History 46% ; and to Mathematics 58%. If we compare those subjects which have only of late been classed among the departments for which appropriations are made, we shall still find large percentages of the sums allowed devoted to the "continuations." Thus for Meteorology 24% ; Slavic Literature 25% ; Assyriology 33% ; Scandinavian Literature 45% ; Ethics 53% ; Classical Philology (instituted for the benefit of Professor Allen) 84%.

While in 1885 as compared with 1884 we have reduced the orders out for books from 3003 to 2268, we have increased the orders for continuations from 1422 to 1536. The net result is that while for 1884 we had 4425 active orders of both kinds, in 1885 we had 3804.

These figures show how great is the tendency to encroach more and more in behalf of periodicals and continuations upon the available funds which supply the literature of the different departments of learning. The reason is obvious. Students find the periodical issues in their several fields of labor necessary to keep them abreast of the advances which are making in those fields, and this necessity becomes more and more apparent. It signifies however that tentative work, such as is for the most part given in periodical publications, is bought for the sake of a present advantage, at the cost of diminishing the accessions of books and monographs which as a rule contain the riper results. It is a question if some limit should not be fixed to this increase of such current helps.

The appropriations to departments of learning are governed in some degree by the amounts of the special funds devoted to them.

We usually divide our annual income into about 40 special appropriations unequal in amount, two of which cover books naturally classed in some or all of the other appropriations. These exceptions are the special appropriations made by the Library Council for costly works, and the reserve given to the Librarian to be used at his discretion and used in the main to eke out the several other appropriations as occasion requires. About 10% of the whole, on an average, is given to the costly works and about 15% to the Librarian.

The following table will show the comparison of the appropriations and orders for the last five Library years, excluding the sums devoted to Parliamentary papers and periodicals: —

	Appropriations.	Orders, including "continuations," and last year's unfilled orders.	Orders unfilled at the year's end, including all old orders.
Year ending in 1881	$9,370	$8,869	$7,245
" " " 1882	12,350	12,409	7,043
" " " 1883	14,975	16,294	12,172
" " " 1884	17,600	21,490	13,298
" " " 1885	13,700	19,889	10,457

Dividing our unfilled orders by countries we get the following figures: —

Countries.	Continuations.	Others.	Total.
America	111	139	250
Canada	2	4	6
England	352	573	925
France	274	412	686
Germany	647	728	1,375
Italy	57	362	419
Scandinavia	40	39	79
Miscellaneous	53	11	64
	1,536	2,268	3,804

An attempt has been made to ascertain the proportion of old books among our orders. Taking 1916 orders we find —

For the XV. and XVI. centuries . . . . 19 orders.
" XVII. century . . . . 35 "
" XVIII. " . . . . 166 "
" XIX. " first half . . . . 378 "
" " " 1851–1880 . . . . 711 "
" " " 1881–1885 . . . . 473 "

The invoices from our foreign agents show how the orders are divided among them: —

Agents.	1884 in volumes.	1885 in volumes.
English	1,608	1,563
French	1,242	1,444
German	2,106	2,856
Italian	219	424
Scandinavian	330	. .
	5,505	6,287

There has been a marked increase in the alacrity of our agents. Our American agents in 1884 filled 82% of their orders; in 1885, 84%; our foreign agents in 1884 filled 63%; in 1885, 72%. The most conspicuous change has been in Reinwald of Paris, who last year filled 24% and this year 83% of his orders.

The Library still continues to have charge of the issue of the weekly *Calendar* of the University.

JUSTIN WINSOR, *Librarian*.

GORE HALL, Nov. 28, 1885.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — The Herbarium and its library during the past year have been more largely resorted to than formerly for consultation and study, both by students in the University and by botanists from various parts of the country.

From the Curator's memoranda it appears that 7687 sheets of specimens have been incorporated into the Herbarium, most of them after careful determination. One hundred and forty-four volumes and about two hundred pamphlets have been added to the library, two thirds of them as gifts from or through the Director. The library is now estimated to contain 4626 volumes and 3128 pamphlets or separate papers, without counting works which do not relate to Botany.

Both the Director and the Curator have had the advantage of being in the field during a part of the winter and spring, — the latter in Guatemala, where the fruits of a promising expedition were diminished by sickness incident to the climate; the former in Mexico, Arizona, and California. The Director was accompanied by our professor of Cryptogamic Botany, Dr. Farlow, who thus devoted a part of his year of vacation to researches upon American ground rather than in European collections.

During the absence of the Director and Curator the Herbarium was in charge of Mr. A. B. Seymour (now professor in the Wisconsin State University), under the obliging supervision of Professor Goodale.

The more important publications issued from the botanical department during the past year are two considerable botanical papers published by the American Academy of Arts and Sciences, one by the Director and the other by the Curator. Also, Professor Goodale's Physiological Botany, which constitutes the second volume of The Botanical Text-Book, and which at length gives to advanced instruction in this progressive branch of the science advantages and aids measurably equivalent to those which have been supplied for morphological and systematic botany.

Partly in consequence of the temporary absence of the Curator, which has been referred to, the disbursements of the Herbarium have this year fallen within its income. This could not have been except for the renewal of the gift of $1000 from the Trustees of the Massachusetts Society for the Promotion of Agriculture, — a special contribution toward the salary of the Curator. Without this gift, indeed, there are no means for paying the small salary which the Curator receives for his very valuable and laborious services; and it is understood that this gift is only for a present emergency. The endowment of the Herbarium barely suffices for its current expenditures, without any allowance for salaries; and the Director receives none. Meanwhile the work which the establishment performs, in consequence of its position as a botanical centre, and the perpetual influx of new material requiring prompt examination and report, presses more and more upon the time and strength of the Curator and Director, and, while adding to the value of the collection, greatly retards the progress of the important publications to which they are pledged.

ASA GRAY, *Director*.

NOVEMBER 12, 1885.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — As Director of the Botanic Garden I have the honor to submit the following report for the academic year 1884–85: —

The weather during the whole season has been favorable for carrying out many of the plans outlined in the last report. The plots for the illustration of morphology have been increased in number and size, until now all of the more important features of the subject are fully displayed. To render the groups as useful as possible, the specimens are arranged in substantially the order laid down in the common text-books of Botany, so that the different forms of stems, leaves, flower-clusters, and flowers can be easily recognized by any pupil. No parts of the Garden are more frequented by our own students and by those of the schools of the neighborhood, than the plots devoted to the exemplification of morphology.

The number of plants cultivated to exhibit the wide variations under domestication was larger than in any previous year, and the specimens were turned to better account in teaching than has been possible before. During the coming year this plot will be filled with still other varieties illustrating the same subject. By such rotation of crops covering several years, it is designed not only to exhibit a wide range of variation, but also to display a larger number of culinary plants well known in Europe but seldom grown in this country.

Additions have been made to the plots containing the plants used in the arts, and the success attained warrants still further increase. There are many visitors who come to the Garden expressly to see the collection of living economic plants, especially those which yield textile fibres, dyes, tanning materials, and drugs. These are now to be exhibited in plots by themselves, even when duplicates appear in the orders.

Few changes have been made during the year either in the plots illustrating the Natural Orders or in those devoted to American plants. The new plants added have been carefully labelled, and an attempt has been made to replace by new labels those of former years which had become well-nigh illegible. But the whole system of labelling in the Garden is far from satisfactory. The iron labels which were prepared at considerable cost three years ago have proved utterly worthless. Experiments have been in progress for some time with the purpose of providing our Garden with the most durable and legible labels. The most promising experiment in this direction is based upon the models used in the Garden at Berlin, — namely, enamelled iron with plain black letters burnt in the face of the enamel. These are somewhat higher at the outset than any others which we have heretofore employed, but they give every assurance of durability. About one hundred of these have recently been exposed to all weathers, and up to the present time show no sign of injury. They appear to be beyond comparison the best we have ever had. There are now in course of preparation for the coming season about one thousand of these enamelled labels, and about the same number of labels made upon a model designed by the gardener. It is a familiar fact in all botanic gardens that it is practically useless to employ small labels which can be easily removed. Such small labels are often taken up by visitors in order that they may be more easily read, and it is to these persons a matter of indifference as to where the label is again placed. The errors which arise from such unintentional displacements are extremely annoying to all who are connected with the Botanical Department. It is hoped that the use of larger labels may reduce the evils of displacement to a minimum.

By purchases and by exchanges the total number of plants cultivated in the Garden has been somewhat increased. Most of our best recent acquisitions are due to the energy of the Curator of the Herbarium, Dr. Sereno Watson, who collected largely in Guatemala during the Spring. Nearly all the living specimens were received in good order and will form the basis of advantageous exchanges. Dr. Watson also sent to us a large and varied collection of specimens preserved in alcohol. These cannot yet be utilized on account of the imperfect provisions which we have thus far made for their preservation and exhibition. Many of the specimens are of high interest to histological students.

The whole range of greenhouses is now in excellent working condition. Some changes in the older houses, demanded by the erection of the new buildings, have proved satisfactory, and will probably obviate the necessity of further changes for some time.

With the approval of the Overseers' Committee on the Botanic Garden, plans have been matured during the year for providing the classes in Botany with our wild flowers in winter and early spring. Our College instruction begins near the time of the early frosts, and ends in May. The whole period in which our Garden can furnish nish out-of-door flowers for our classes is very short. To extend this time by forcing spring and early summer plants into bloom during the winter months is not only costly, but it demands room which can ill be spared from our narrow greenhouses. By the assistance of a few friends of the department, funds for trying this experiment have been provided, and there is reason to believe that it will succeed. Heavy outlays for these plants for forcing have already been made, and adequate provision has been made for their proper care. All our available pits and cold frames are now in use, and a portion of one of the green-houses has been reconstructed to give us additional room for the forced plants.

The Garden has supplied required material to the following classes: Natural History 3 (General Botany, an elementary course), Natural

History 5 (Biology, first half), Natural History 7 (Advanced Botany), Natural History 11 (Experimental Physiology). A working collection of alcoholic specimens was also prepared during the season for the classes in Histology.

The convenient rooms in Harvard Hall have answered well for the needs of the instruction. The Laboratory has still an unexpended balance from the gift of Messrs. Hunnewell and Ames, so that for the present year at least the supply of apparatus will be sufficient. Many of the appliances are, however, of a perishable nature and must be replaced in two years. For the present our supply answers every purpose.

The students' Herbarium at Harvard Hall has been enriched by the purchase of the duplicates collected by the late Charles Wright, who was for some time attached to the Gray Herbarium. This collection is being put in order as fast as the funds at the disposal of the Director will allow, and it has already proved of use to the advanced students.

Our collection of specimens illustrating the products of the useful plants has been enlarged during the year in anticipation of an elective in Economic Botany. As this elective has been chosen for the year 1885–86 by ten of our most advanced botanical students, the outlay has proved to be a judicious one. The Director would be glad to add many specimens the coming year, since he can probably avail himself of the assistance of this advanced class in the preparation of many of the products, but unless more money than is now in hand is placed at his disposal, the purchases must be very limited. A Botanical Museum is of slow growth. Even if we had ample money to draw upon for the construction of the building itself, the needed specimens might not be immediately purchasable. The specimens must be brought together as opportunity offers, and for this reason it would seem desirable that funds should be made available to take advantage of any exceptional occasion for purchase. From such funds must also come the salary of a Curator; for the present, however, it would be sufficient to add, with a somewhat increased remuneration, the duties of a Curator to those of the assistant in Botany. But it would be better to assign the care of the forming museum to some person who could also render service at the Gray Herbarium in relieving Drs. Gray and Watson of a part of their routine work, and who could at the same time take charge of the nomenclature in the Garden.

The Director has received encouragement and substantial aid in his work during the past year from members of the Overseers' Committee on the Garden. Through the influence of its chairman, Henry Lee, Esq., some money for special purposes has been secured for present use. All of these gifts appear in the Treasurer's Report with the exception of those which, though made to the Garden just before the end of the fiscal year, were not received until the early days of September.

GEORGE LINCOLN GOODALE, *Director*.

November, 1885.

To the President of the University:

Sir, — I have the honor to submit the following report on the condition and progress of the Arnold Arboretum during the year ending August 31, 1885: —

The progress made by the City of Boston in the construction of its roadways through the Arboretum had reached at the commencement of the year a point when it was no longer possible to delay the adoption of a definite plan for the permanent arrangement of the collections. The future value of the Arboretum must largely depend upon the manner in which this plan is made; and the development of a scheme of planting scientific in method and practical in scope has long occupied my own attention as well as that of such counsellors as I have been able to call to my assistance. The thanks of the Arboretum are in this connection due in particular to Messrs. F. L. and J. C. Olmsted, who have devoted much time to the study and preparation of the plan which has now been determined on. The considerations which have finally led to its selection are briefly these.

An arboretum is a museum devoted to one branch of natural history and intended, by the aid of living specimens primarily, to facilitate the study and increase the knowledge of trees and other plants. It should contain and display therefore as many forms of arborescent life as is compatible with the climate of the region in which it is situated, its own extent and resources. A public arboretum, like any other public museum, must be prepared to instruct the public through the display of representative types selected from its collections and specially arranged for the definite purpose of object teaching; and it must be prepared to facilitate investigations in the particular department of science it is created to illustrate, by means of working collections, both living and dead. As it is expected to perform two distinct although concurrent duties, the public arboretum should contain two distinct collections.

1. The permanent collection for display, consisting of a selection of species intended to illustrate as perfectly as circumstances of

climate will permit, and by fully developed specimens, the most important types of arborescent vegetation.

2. A collection for investigation, which need not necessarily be permanent, and which should be arranged in a manner to permit the admission of new species or new forms and the removal of others which have served their purpose. To this second collection would naturally be joined all minor collections like that of shrubs and other plants of less enduring character than trees.

The educational value of any great arboretum would, I believe, be increased by such a division of its collections; in the present case it is essential. A complete collection of trees, — that is of arborescent species and natural or artificial forms or varieties already known, which could be made to grow in a climate as severe even as that of Eastern Massachusetts, without provision for future additions, which are likely to increase rather than diminish in number as the cultivation of trees becomes more general, but with a proper representation for each species and variety, — would occupy not less than a thousand acres of land and require an annual outlay for maintenance far in excess of any income the Arboretum can possibly hope to enjoy for this purpose. Selection, therefore, is absolutely necessary; and the establishment of two distinct collections has been decided upon, — a permanent or exhibition collection, in which certain selected species or forms will be allowed space for full development, and a working or experimental collection, which can be crowded into a comparatively small space, and in which species of doubtful hardiness, transitory forms of horticulture rather than of botanical or economic value, new introductions and other trees, which for one reason or another have been omitted from the permanent collection, will all sooner or later find their places.

The selection and proper grouping of the typical forms, intended to illustrate in the main collection the hardy arborescent vegetation of the earth's surface, is difficult; and this difficulty is immensely increased by the fact that the permanent arrangement of an arboretum is really permanent and cannot, as is the case with collections in other museums, be changed or modified to meet the demands of more advanced knowledge or the requirements of changing fashions. A tentative arrangement is impossible, and the difficulty of selection and especially of grouping is not diminished by the nature of the collection in which each individual will continue to require yearly additional space for a century perhaps. The selection of this type collection has only been reached after the most careful consideration and with many modifications of the plan which at first appeared practicable. It will contain, as now determined upon, representatives of all the genera of trees hardy in Eastern Massachusetts. Species of doubtful hardiness and all accidental and other varieties not permanently fixed by time or long cultivation will be excluded. Prominence will be given to the species of Eastern North America, and especially to those native of New England, because these species are better adapted to reach maturity in this climate than those of any other region; and because it is believed that the community, which will naturally have the closest relation with the Arboretum, will derive the greatest benefit from the examination of a collection of our native trees growing under favorable conditions and eventually fully developed. And this will doubtless be found true whether the collection studied in its scientific, industrial, or purely ornamental aspect.

The plan contemplates that each hardy tree species of Eastern America shall be represented by an individual so planted as to secure for it the maximum growth attainable in this climate, and also by a group of individuals varying in number from six to twenty-five selected to show variations of character and habit in the species, and planted with the view of securing its expression in mass rather than perfect individual development. This plan, it is hoped, will insure the permanence in the Arboretum of the most important species which without the groups would have to depend upon the life of single individuals for representation; it will, moreover, show the habit and behavior of all our principal trees under as nearly natural conditions as it is possible to secure in any artificial wood.

Exotic species and their most valuable and best fixed varieties will be represented by single specimens save in the case of a few exceptional species, whose peculiar value or marked fitness to support our climatic conditions makes it desirable to supplement the single specimen, as in the case of indigenous species, by a considerable group of individuals.

The plan allows what is believed to be more than sufficient space for the possible full growth of every species, native and exotic; and no more individuals of any species and no supplementary species other than those expected to reach maturity will be planted. This plan has, of course, serious disadvantages. The different specimens and even the different species groups will for a long time appear needlessly remote from each other, and close planting at the beginning would doubtless make the Arboretum more attractive to the casual visitor. It has, however, its advantage in a very great economy of labor and material. Trees, too, which one generation plants in the expectation that the next generation will cut them down are rarely cut at the right time. Over-crowding and the complete ruin of specimens is the result. It is hoped in this Arboretum, however, that by adhering to the plan of only planting in the type collection the number of individuals intended to reach maturity, it will be saved from the fate of all the old public collections of trees in which early over-planting or unsystematic planting has produced either confusion or the entire ruin of all perfection of individual growth. The general type collection will be arranged by genera from Magnolia to Larix in the sequence of their botanical relationship, such an arrangement probably affording the greatest facility for examination and maintenance. In a few instances, however, genera will be placed out of the natural sequence in order to secure for them favorable conditions of soil and exposure. The species of the different genera will as far as practicable be arranged geographically, first those of North America, then those of Europe, and then those of Asia; the species of each continent in their proper botanical sequence.

The advantages and the disadvantages of this general plan thus briefly described cannot unfortunately be finally judged until long after all those interested in the early development of the Arboretum have passed away. This generation can neither enjoy its mature fruits or feel the full weight of errors in arrangement made now and which time is only too certain to bring to light.

The years which have passed since the conception of the Arboretum have been years of preparation. These are now to be followed by a period of active construction, and for this the Arboretum is fairly well equipped in its own resources and in the interest of its friends and correspondents. The years of construction and early growth will, it is to be hoped, be followed by a long period of real educational importance and value.

PLANTATIONS AND NURSERIES.

The provisional or tentative arrangement of the shrub collections referred to in my last report has been completed. These now occupy thirty-seven parallel beds, each ten feet wide and three hundred feet long. This collection now contains about eleven hundred species and varieties arranged in botanical sequence, with provisions for a considerable further increase.

Trees and shrubs to the number of 2574 have been moved from the different nurseries into permanent boundary and other plantations. The plantations and nurseries are all in excellent condition. During the year $444\frac{44}{100}$ squares of peat have been dug and stacked for future use, at a cost of $1022.10; and 110¾ cords of wood have been cut, at a cost of $221.50. The largest part of this wood remained unsold at the end of the year.

The effect of pruning on the old trees forming the permanent natural woods of the Arboretum, described in my last report, has so far been satisfactory, and this work on a larger scale than before has been carried on uninterruptedly during the past summer.

INTERCHANGE OF PLANTS AND SEEDS.

The interchange of plants and seeds with other botanical and horticultural establishments has been continued during the year. There have been 4459 plants (including cuttings and grafts) and 39 packets of seeds distributed as follows: To all parts of the United States 4216 plants and 8 packets of seeds; to Great Britain 43 plants and 13 packets of seeds; to the continent of Europe 200 plants and 18 packets of seeds.

There have been received during the year 6783 plants (including cuttings and grafts) and 40 packets of seeds from 21 donors. The most considerable contribution of this sort has been a set of cuttings and grafts from the Kew Arboretum numbering 2200, and representing several hundred species and varieties of rare trees and shrubs.

HERBARIUM AND MUSEUM.

There have been added to the Herbarium during the year 1085 sheets of dried plants; and the Museum has received numerous important gifts of woods, cones, and photographs.

During the year the following publications prepared in the Herbarium have appeared: —

A Report upon the Forests of North America. By the Director. Forming Vol. IX. of the Final Reports of the 10th Census of the United States. 612 pages, with 54 forest maps.

The Woods of the United States. By the Director. A Manual intended to serve as a Guide to the Jesup Collection of American Woods in the American Museum of Natural History in New York, which has been opened to the public during the year.

The Report of the Forestry Commission of the State of New York. Illustrated with numerous photographs and a forest map of the Adirondack Plateau, and accompanied by a scheme of legislation for the better management of the forest property of the State. By the Director and his associates of the Commission.

Mr. Faxon has completed during the year 50 detailed drawings and a large number of unfinished sketches for the new *Sylva* of North America. For the purpose of securing material for this work the Director, accompanied by Mr. Faxon, visited during the early Spring months the islands of St. Kitts, Antigua, Guadaloupe, Barbadoes, and Jamaica in the West Indies, parts of Western Texas, Western Louisiana, and Florida.

C. S. SARGENT, *Director*.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — As Director of the Chemical Laboratory, I submit the following report for the year 1884–85: —

The courses of instruction in this department were distributed as follows: the course of elementary lectures on general chemistry to the Freshman class was given by the Director; the course on descriptive chemistry (Chemistry 1) was given by Professor Jackson; the course on Mineralogy (Chemistry 2) was given by Mr. Huntington; the course on qualitative analysis (Chemistry 3) was given by Professor Hill, assisted by Dr. Sanger; the course on quantitative analysis (Chemistry 4) was given by the Director, assisted by Mr. Young; the course on organic chemistry (Chemistry 5) was given by Professor Hill; the advanced course in general chemistry (Chemistry 6) was given by the Director. The advanced students in organic chemistry (Chemistry 9) worked under the special direction of Professor Hill. In addition to the above courses, all of which have been established for several years, a short practical, but very elementary, course on Mineralogy was given by Mr. Huntington during the last year in connection with the course on Geology known as Natural History 4. This course was limited to the study of the chief mineral constituents of ordinary rocks and intended as an introduction to the study of Geology. The course was numerously attended and involved a large amount of work on the part of the instructor. The Director also gave a short popular course on optical crystallography, which was voluntarily attended by many of the students of all classes working in the Laboratory.

The several laboratories were under the oversight of the following assistants. The qualitative laboratory under that of Dr. Sanger; the quantitative laboratory under that of Mr. Young; the mineralogical laboratory, of Mr. Huntington; and the organic laboratory, of Dr. Merrill.

The total number of students who received instruction at the Laboratory, exclusive of those attending the elementary lectures, was 266, including 26 Seniors, 73 Juniors, 81 Sophomores, 17 Freshmen, 17 Lawrence Scientific students, 24 Special students, 2 Graduate students, 1 Medical student, and 25 students in the Summer course. These students were distributed as follows: —

Chemistry 1	115
Chemistry 2	34
Chemistry 3	36
Chemistry 4	13
Chemistry 5	7
Chemistry 6	3
Chemistry 9	1
Natural History 4	57
Summer course	25
	291

As a considerable number of students took more than one course in Chemistry, the last aggregate must obviously be larger than that of the number of persons studying in the Laboratory as given before. The Director would again call attention here, as in his last report, to the small number of advanced students as compared with the large numbers who attend the elementary courses, and again express the opinion that the best results of scientific culture cannot be obtained in the Laboratory until the students bring to the University a preparation in experimental science corresponding to that which is demanded by the literary departments.

Chemical investigations have been prosecuted at the Laboratory with the usual zeal during the last year, although, in consequence of the condition of his sight, the Director has not been able to contribute any considerable share to the work. Professor Jackson has made further experiments on the reduction of camphor to borneol, and demonstrated the superiority of this method for the preparation of borneol in reply to certain criticisms. In connection with Mr. G. T. Hartshorn, Professor Jackson devoted much time to the study of organic substances containing fluorine, and they have shown that chromic superfluoride gives up a portion of its fluorine to benzoic acid, forming difluor-benzoic acid and hydrofluoric acid. This is the first case of the direct substitution of hydrogen in an organic compound of fluorine and adds one more to the meagre list of methods of preparing organic compounds containing fluorine.

Professor Hill and Dr. Sanger continued the study of the bromopyromucic acids begun last year. With Mr. Palmer, Professor Hill undertook the study of the sulphopyromucic acids and established the constitution of two isomeric monosulphopyromucic acids, one bromsulphopyromucic acid, and a dibromsulphopyromucic acid, which they will study in more detail. They also spent considerable time in studying the constitution of mucoxybromic acid, but were unable to bring their work to a definite conclusion before the end of the year. Professor Hill also studied for the Calumet and Hecla Mining Company the behaviour of sound and decayed wood at high temperatures, in order to determine the minimum point of ignition and the minimum temperature at which combustible decomposition products are evolved.

Mr. A. V. E. Young completed his thermo-chemical investigation of the reaction between solutions of alum and potassic hydrate begun last year.

Mr. O. W. Huntington has continued his work on the mineral collection and in this connection has studied crystallographically a series of very interesting crystals of azurite from near Clifton in Arizona, presented to the Cabinet by Mr. Godfrey Hyams, a former student at the Laboratory. He has also studied an assumed mode of twinning by crystals of quartz, in regard to which there has been much question; and shown by an examination of a large number of cases that the supposed twins are simply individual instances of conformity to rational ratios among a great number of groups of crystals where no such regularity appears, and hence that the conformity in the few cases where it exists is probably accidental.

The Director has planned and had constructed during the past year an improved apparatus by which large volumes of aeriform matter can be directly weighed with a higher degree of accuracy than has yet been rendered and with which, if his eyesight is spared, he hopes to obtain important results in connection with his previous work on the revision of the atomatic weights.

The following contributions from the Chemical Laboratory of Harvard College have been published during the year: —

On the Reduction of Camphor to Borneol. By C. Loring Jackson. Am. Acad. Proc. xx. 163.

On the Action of Chromic Superfluoride on Benzoic Acid. By C. Loring Jackson and G. T. Hartshorn. Am. Acad. Pro. xxi. 137.

On Substituted Pyromucic Acids. By H. B. Hill and C. R. Sanger. Am. Acad. Proc. xxi. 135.

Ueber einige Furfuranderivate. H. B. Hill und G. T. Hartshorn. Ber. deutsch. chem. Gesellsch. xviii. 448.

Ueber Sulfobrenzschleimsäuren. H. B. Hill und A. W. Palmer. Ber. deutsch. chem. Gesellsch. xviii. 2095.

A Thermo-chemical Analysis of the Reaction between Alum and Potassium Hydrate. By A. V. E. Young. Am. Acad. Proc. xxi. 201.

Crystallographic Notes. By Oliver W. Huntington. Am. Acad. Proc. xxi. 222.

As has been usual for many years past, courses of instruction were given last summer in the Laboratory, from July 6 to August 15, under the direction of Mr. A. V. E. Young, assisted by Mr. A. W. Palmer. These courses were attended by twenty-five students and seem to have given great satisfaction to the many teachers who availed themselves of the privileges which they offered. After the close of this Summer course Mr. Young resigned his position as assistant to accept a professorship in the North Western University at Evanston, Ill.

JOSIAH P. COOKE, *Director.*

To the President of the University:

Sir, — As Director of the Jefferson Physical Laboratory I have the honor to present the following report for the academic year 1884–85: —

A course of experimental lectures on Electricity, Magnetism, and allied subjects was given by the Director to the whole Freshman class. These lectures were attended also by 19 special students, 5 members of the Lawrence Scientific School, and 31 members of higher classes of the College. Course *A*, conducted by recitations and lectures on the Principles of Physics, was given by Dr. Hall. Course 2, on the Principles and Methods of Physical Measurement with laboratory work, was conducted by Professor Trowbridge, Dr. Hall, and Dr. Whiting. Course 3, consisting of recitations and lectures on the Conservation of Energy, was given by Professor Trowbridge. Course 4, consisting of recitations, lectures, and experiments on the Undulatory Theory of Light, Electricity, and Magnetism, was given by Professor Lovering. Course 5, comprising recitations, lectures, and laboratory work on Thermo-dynamics and Thermics, was given by Dr. Gibbs. Course 6, by Professor Trowbridge, was on Experimental Physics, with laboratory work for advanced students. Course 7, on Mathematical Physics, was also given by Professor Trowbridge. Course 8, on the Theory of Probability, with its application to the Kinetic Theory of Gases, was given by Dr. Hall. Course 9, on the Electrical Potential, with laboratory work, was given by Assistant Professor B. O. Peirce.

The total number of students attending elective courses (exclusive of those, not Freshmen, who attended the Freshman lectures) was 84, viz., Seniors 12, Juniors 15, Sophomores 11, Freshmen 22, Special Students 14, Graduates 10. As a few students attended more than one of the elective courses, the total number of individuals is less than the number given above.

I learn from a written report made to me by Professor Trowbridge, before his departure for Europe, that 10 students were engaged in higher laboratory work under his direction, and that he endeavored to arrange this work so that each student should have, in addition to his regular and systematic instruction, some special subject for investigation. These investigations were in the main upon subjects which can be studied from year to year: such as the Moduli of Elasticity; Electromotive Force; the Electrical Resistance of Electrolytes; the Mechanical Equivalent of Heat; Quantitative Measurements in Magnetism; and the Relations of Light to Electricity. By this method he hoped to make the laboratory a centre for systematic work in Physical Science. Besides working with each student on the special investigation assigned to him, Professor Trowbridge has been engaged on his own independent researches. The fruits yielded by the year's work may be inferred from the following papers, which have been published in the Proceedings of the American Academy of Arts and Sciences or in the American Journal of Science. 1. On the Measurement of Strong Electrical Currents, by Professor Trowbridge. 2. Discussion of a New Standard of Light, by Professor Trowbridge. 3. On the Elasticity of Ice; and 4. On the Effect of Temperature on the Magnetic Permeability of Iron and Cobalt, both by Professor Trowbridge and Mr. McRae. 5. Photography Applied to Electrical Measurements; 6. A Method of Producing Alternating Currents for the Ruhmkorff Coil from a direct Dynamo-Machine; and 7. A Study of the Causes of the Irregularities of Voltaic Batteries, all by Professor Trowbridge and Mr. Hayes. 8. The Dynamical Action of Electrical Currents as Applied to Galvanometers, with a Simplification of Maxwell's Treatment of Zonal Harmonics, by Mr. Hayes. 9. A New Method of Determining the Mechanical Equivalent of Heat, by Mr. Webster. For three years Messrs. McRae and McAdie, members of the U. S. Signal Corps, have been allowed by the Chief Signal Officer to study in Cambridge, spending the last two years in laboratory work. The year covered by this report has been given to a careful examination of the question of establishing practical signal-stations for the observation of atmospheric electricity. New methods of observation and new instruments have been devised, the U. S. Government contributing $250 for this object, which was expended under the supervision of Professor Trowbridge. A full report of the work is in the hands of the Chief Signal Officer. By his permission the two observers have already published an abstract of the report, describing the new instruments, methods of observation, and results. Mr. McAdie has also published an account of observations on atmospheric electricity at high altitudes, made in the summer on Blue Hill; and papers on The Aurora and its Relation to Meteorology, on Protection from Lightning, and on Simultaneous Observations of Atmospheric Electricity.

Much work has been done in the laboratory on the following subjects, though not leading to results which have been published: 1. Relations of light to electricity. 2. Electrical resistance of electrolytes. 3. Diathermancy of electrolytes, under the action of electricity. 4. Electromotive force. 5. Rotations in the magnetic field. 6. Study of electrical polarization. 7. Methods of testing plane surfaces and diffraction gratings. 8. Mr. McAdie has made a continuous set of observations, twice a day, on the so-called rainband lines in the solar spectrum. During a part of the year and the summer vacation two members of the Junior class, Messrs. Coggeshall and Stone, have been engaged under Dr. Hall's direction in experiments on the magnetic rotation of the equipotential lines of an electric current. These experiments were in continuation of a research which has been prosecuted in the Physical Laboratory of the College at intervals for several years. The work of the last year was greatly facilitated by the expenditure of a liberal grant of money from the Bache Fund of the National Academy of Sciences. The recent experiments have not yet been published in detail.

The general laboratory has been provided with gas, water, sinks, benches, heating, drying, distilling, suction, and other conveniences, and with forty-eight private drawers and lockers for students. A tool room, an inner laboratory or preparation-room, and a small cabinet for physical apparatus have been divided off from the space free to the students. Through the kindness of Professor Pickering the time of the Observatory is transmitted to the laboratory, where a standard-clock, automatically controlled, communicates signals to different parts of the building. The annual breakage in the students' laboratory has been reduced by a system of written orders and is more than covered by the students' fees. The balance has been expended in the multiplication of articles of inferior delicacy, in preference to the purchase of a single one of superior workmanship, in order that the class might be able to follow without delay in the laboratory the course of experiments described in the lectures. Dr. Whiting distributed to the students at each lecture printed directions, with examples; and afterwards collected them into a syllabus, which he has privately printed for the use of the laboratory.

As possession of the building was not obtained until the commencement of the academical year, much of the time of the Director has been given to its furnishing and equipment. New cases have been made for the Physical Cabinet, and the old ones adapted to their new quarters. The apparatus has been safely moved from Harvard Hall, and systematically arranged in appropriate rooms. Electric bells, communicating with the engineer and the janitor, can be operated from all parts of the building, and the current from either of the two magneto-electric machines is carried by stout, insulated wires to all places where a strong current is desired. Provision has been made for darkening the rooms for optical experiments, and the apparatus for projection has been adapted to the windows. The general cabinet has been enriched, and costly instruments have enlarged the opportunities for physical research. Other improvements are contemplated, which the savings from the income of the year 1884–85 will allow to be realized without delay.

JOSEPH LOVERING, *Director*.

To the President of the University:

Sir,—By the death of Mr. Robert Treat Paine during the past year the Observatory of Harvard College has lost one of the oldest of its friends, well acquainted with the theory and practice of several departments of astronomy, and always deeply interested in the work of this institution. He was an assiduous computer and observer of astronomical and meteorological phenomena, and a member of the Visiting Committee of the Observatory from the time of its first organization, forty years ago. He has perpetuated his services to his favorite science by the bequest to this Observatory of his entire fortune, amounting to more than a quarter of a million of dollars. Upon the settlement of the estate, one half of this sum will become immediately available.

The resignation of another of the original members of the Visiting Committee, Mr. J. Ingersoll Bowditch, is a matter of extreme regret. His services to the Observatory have been continuous, and without his active aid and advice no important steps have been taken in the extension of its work, which has frequently been rendered possible only by his exertions.

During the year the work of which is to be described in the following paragraphs, the resources of the Observatory have been materially diminished, owing to circumstances stated in the last report. It was there mentioned that no means were available for retaining the services of five of the assistants previously employed. But the salary of one of these assistants for another year was soon after provided by means of a subscription undertaken by some of his colleagues, who furnished a part of the required sum from their own scanty means. Without this relief, it would have become necessary to interrupt the regular use of the large telescope in order to continue work with the meridian instruments. As it is, the reduction in the amount of work carried on is much less than would have been expected; but this result is due to extraordinary efforts on the part of the observers, who have performed without assistance the work in which they were previously aided by recorders. This has required an increase in the time spent in observation, and has rendered the work much more laborious. While this evidence of enthusiasm and devotion to science is most gratifying, it is obvious that it cannot long be continued without injury to health. Indeed, the effects of over-fatigue and exposure during the long, cold nights of last winter were manifest in more than one instance.

EAST EQUATORIAL.

Eclipses of Jupiter's Satellites. — Photometric observations of these eclipses have been continued upon the system adopted in 1878. In all, three hundred and nineteen eclipses have now been observed, thirty-five since the end of October, 1884. The original plan contemplated the prosecution of the work through an entire revolution of Jupiter around the Sun, more than half of which has already been completed. The importance and extent of this work has made it advisable to delay the adoption of a definite plan of reduction until a sufficient amount of experience had been gained; but there is now no reason to defer the consideration of this subject.

Revision of Zone Observations. — The reduction of the observations of the stars between the declinations + 0° 50′ and + 1° 0′ has been carried on. To determine the scale of the wedge photometer employed in the work, the constants of the instrument have been photometrically examined, and the initial point of the scale for each evening of observation has been determined by means of the stars in each series which also occur in the working list of the meridian photometer. In the entire zone there are about three hundred such stars, all of which have now been measured with the meridian photometer. The magnitudes of the fainter stars observed in the zone with the wedge photometer have been recomputed by the aid of these data. The work of the wedge has thus been made homogeneous with that of the meridian photometer.

Revision of DM. Magnitudes. — The observations of DM. stars between the declinations + 49° 50′ and + 50° 0′, which were begun with the wedge photometer during the previous year, have been completed, as well as a similar series between + 54° 50′ and 55° 0′. The resulting magnitudes have been computed, as in the case of the zone between + 0° 50′ and + 1° 0′, by means of the stars occurring in these zones which are also under observation with the meridian photometer. It is desirable that similar observations should be made in other zones at intervals of 10°. This would extend the scale of the meridian photometer about one magnitude, and would furnish means for determining the scale of the Durchmusterung between the magnitudes 9.0 and 9.5.

The extensive use thus made of the wedge photometer seems to show that the instrument used here is not capable of the great degree of precision which is claimed for that employed by Professor Pritchard. To determine whether this difference is due to the form of the instrument, Professor Pritchard was requested and has kindly consented to superintend the construction for this Observatory of a wedge photometer made upon his plan.

Standards of Stellar Magnitudes. — The photometric observations of faint stars selected as standards of magnitude in twenty-four regions following bright stars, and mentioned in previous reports, have been provisionally completed. A few of these stars were bright enough to be observed with the meridian photometer; but most of them were observed with the East Equatorial, with the aid of the wedge photometer or of Photometer I. The results have been published in the report to the American Association for the Advancement of Science by the committee in charge of the subject of stellar magnitudes.

Comparison Stars for Variables. — Another extensive investigation begun with the wedge photometer is the determination of the magnitudes of stars which have been used as standards of comparison for variable stars. Besides the stars of this class named in published works, many others, employed in observations not yet published, have been added to the list. Observers of variable stars are requested to communicate to this Observatory the comparison stars employed by them, and not identical with those contained in published lists. When these comparison stars are sufficiently bright, they are measured by the meridian photometer. Their magnitudes, thus determined, serve as a basis for the measurement of the fainter stars by the wedge. Two observations of each star not determined by the meridian photometer, and of a sufficient number of the others, are made with the wedge on each evening when the region occupied by the comparison stars of any particular variable is observed. Two complete observations of this kind, made on different evenings, are regarded as sufficient; but when moonlight or other causes render the work of either evening imperfect, it is repeated on a third evening. Some incidental attention is also paid, during this work, to enlarging the lists of comparison stars when they can thus be better adapted for future use.

Temporary Star in the Nebula of Andromeda. — This remarkable object, as well as a series of comparison stars selected for it, was repeatedly observed with the wedge photometer immediately after the announcement of its discovery. It is still occasionally observed. It is proposed to determine photometrically the brightness of the stars with which it has been compared by observers at other stations, so far as these are made known.

Comets. — These objects have occasionally been observed as in former years, chiefly by Mr. Wendell. The observations have been confined to special times when they would be of most immediate value. Comet 1884 III. (Wolf) was observed on one night; two others, discovered by Barnard and by Brooks, were respectively observed on seven and on four nights.

Spectra and Color of Stars. — The observations upon the spectra and color of stars have been completed upon the restricted plan indicated in the last report, but are not as yet reduced. It is probable that photography will soon afford a more satisfactory solution of this problem. The work of the East Equatorial in this respect, and also in some others, has been considerably diminished during the year by the frequent employment of the observers in recording the observations made with the meridian photometer, since the diminished resources of the Observatory did not permit the engagement of special assistance in the work of recording.

MERIDIAN CIRCLE.

The work done with this instrument during the year has been more varied in character than usual, while its amount has been somewhat diminished by the financial necessity of dispensing with an assistant to the principal observer. A considerable portion of the year has been occupied with the investigation of the errors of the East Circle of the instrument. This work is now completed. The spaces of 30°, 15°, 5°, 1°, have been independently investigated; the labor thus performed is equivalent to that of reading a single microscope about forty thousand times.

In order to perfect the revision of the zone between $+50°$ and $+55°$, some additional observations were found to be desirable, when the reduction of the preliminary revision, finished in August, 1884, had been completed. The doubts remaining to be settled chiefly related to possible errors of an entire minute in the circle readings, and to unusually large discrepancies between the positions here obtained and those given in the Durchmusterung. The new revision was begun January 8, 1885, and will be completed with six more nights ot observation. Each star concerning which any doubt existed has ordinarily been twice observed. The whole number of observations is 937.

The observation of a polar catalogue was begun April 30, 1885.

The working list includes 30 fundamental stars and 153 others. For the present year, the plan of the work requires two observations of each star at each culmination. The number of observations hitherto made is 384.

A series of 275 observations was carried on simultaneously with corresponding observations made with the almucantar, in order to compare the results given by the two instruments, and to test the precision of the Clark level attached to the meridian circle.

Observations of particular stars have also been made at the request of Dr. Auwers, Dr. Elkin, and Professor Holden. These observations are respectively 173, 24, and 12 in number. The first two series will furnish material for the determination of heliometer constants, and the last for the reduction of latitude observations.

The total number of observations with the meridian circle is accordingly 2808, including 1003 observations of fundamental stars employed in the revision of the zone and in the polar catalogue.

The reduction of the first revision of the zone observations is complete. The observations of fundamental stars made up to last October, during the second revision, are also reduced. The reduction of the miscellaneous observations is finished, with the exception of a few of those made at the request of Dr. Auwers.

The report of the longitude operations between Cambridge and Montreal in the summer of 1883 has been completed. It will appear, in connection with the report of Professor McLeod, in the forthcoming volume of the Proceedings of the Royal Society of Canada.

MERIDIAN PHOTOMETER.

The number of series of observations made during the year by Mr. Wendell and myself is 202, an increase of 61 over those of the previous year; and the number of separate settings somewhat exceeds 50,000, against 27,500 for the previous year. The accordance of the results continues satisfactory. The average deviation of the separate measures of the standard circumpolar stars, expressed in magnitude, is 0.12. Although this exceeds the corresponding result for the previous year by only a single hundredth of a magnitude, the difference may not be purely accidental, but have its cause in the variability of one or more of the standard stars.

The list of objects to be observed with the meridian photometer has been somewhat extended. The stars first selected from the Durchmusterung for observation were those the magnitude of which had been estimated at each of two observatories during the zone observations carried on during recent years under the general direction of the Astronomische Gesellschaft. To increase the regularity of distribution of the stars observed, other zones of 20′ in width were added, so that the entire series includes zones at intervals of five degrees from the equator to the pole. The middle of each zone is defined by the parallel of declination at 0°, + 5°, + 10°, etc.

This system ensured a regular distribution of the stars to be observed, and supplied a sufficient number of stars of the eighth and ninth magnitudes to be employed in the determination of the various scales of magnitude in use. The number of stars between the sixth and eighth magnitudes, however, hardly seemed large enough for this purpose. To supply the deficiency, the zones were extended to a width of 60′ for for stars of the magnitudes 7.0 to 7.9 inclusive, and to a width of 120′ for those of the magnitudes 6.1 to 6.9 inclusive. The magnitudes of the stars brighter than these have already been published in Volume XIV. of the Observatory Annals.

The miscellaneous work with the meridian photometer, mentioned in the last report, has been continued. Two special features of this work have already been mentioned in connection with the observations made with the wedge photometer.

ALMUCANTAR.

Mr. Chandler has continued his observations with this instrument, which in his hands has exhibited a surprising efficiency and accuracy, fully confirming the anticipations expressed in the last report. The work of observing was suspended after July 1, to allow time for the reduction of the previous observations, the number of which between November 1, 1884, and July 1, 1885, was approximately one thousand. The following subjects have been investigated: right ascensions of circumpolar stars; declinations of stars near the equator; the latitude of this Observatory; effects of personal equation at different declinations, obtained by observers with the meridian circle and with the almucantar. The positions obtained by means of the almucantar have such a precision as to have already led to the detection of errors in the accepted places of several important stars occurring in fundamental catalogues, and generally regarded as accurately determined.

MISCELLANEOUS.

Variable Stars. — Messrs. Parkhurst, Eadie, Hagen, and Zaiser, have continued their valuable coöperation with this Observatory throughout the year. The large and rapidly increasing number of observations of variable stars secured by these gentlemen will form a highly important source of information with regard to such objects. Steps have been taken to provide for the reduction of these observations, which will require however the photometric determination of the brightness of the comparison stars before much progress in it can be made.

The request to astronomers made last year in the pamphlet "Recent Observations of Variable Stars" was kindly complied with by the principal observers of variable stars in Europe and America. Their names, together with a summary of their work, are given in the pamphlet "Observations of Variable Stars in 1884," which was published by this Observatory early in 1885.

Stellar Photography. — By the aid of the Bache Fund an important investigation has been undertaken in stellar photography. A Voigtlander portrait lens of 8 inches aperture and 44 inches focus has been reground and mounted equatorially by Messrs. Alvan Clark & Sons. It is driven by clockwork, having a Bond spring governor controlled electrically by a sidereal clock substantially mounted in the clock-room of the Observatory. A wide field of work is opened with this instrument. Many photographs have been taken of the trails left by a star when the telescope is not driven by clockwork. An equatorial star will leave its mark in this way when no brighter than the sixth magnitude. Much fainter polar stars will leave an impression, since their motion is slow. Stars as faint as the fourteenth magnitude have thus been photographed without clockwork. The positions of faint polar stars may be determined with great accuracy from their trails, which are very well defined and minute. They also appear to afford an excellent measure of stellar brightness. Attempts have also been made to prepare star-charts by photography. Regions 5° square will bear an enlargement of three times, and by photolithography will furnish charts of the dimensions and scale of those of Peters and Chacornac. The most striking results have been obtained with stellar spectra. Replacing the slit spectroscope by a large prism placed in front of the lens, photographs have been obtained of stars as faint as the eighth magnitude in which lines are shown with sufficient distinctness to be clearly seen in a paper positive. As all the stars in a large region are thus photographed, more than a hundred spectra have been obtained on a single plate. Mr. William H. Pickering has rendered important aid in this investigation, especially in the photographic process. A portion of Mr. Pickering's investigation on the possibility of photographing the solar corona without the aid of an eclipse was also conducted here. The conclusion thus reached was that, unless the effect of the air could be reduced three hundred times, no satisfactory results could be obtained with our present means. The details of this investigation will be found in *Science* VI., 362, 387.

Time Signals. — The time service of the Observatory has not fully succeeded at all times during the year in maintaining the high standard of former years. Inevitable interruptions and delays have occurred from various causes, among which may be specially mentioned the want of a duplicate mean time clock and the increasing number of telephone and telegraph wires used in Boston, with its natural consequence of frequent interference with wires previously in use. By persevering exertion, however, a satisfactory system for transmitting the signals has now been established. Much delay also occurred in making the arrangements necessary for the new time-ball, which was not brought into operation until October 1, since which time it has been regularly dropped. It is made upon the plan adopted by the United States Government offices, and its cost has been largely provided for by an appropriation made by the city government of Boston.

The list of subscribers to the time signals remains nearly the same as that given in the last report, the most important accession being that of the Boston and Lowell Railroad.

Telegraphic Announcements. — The telegraphic distribution of important astronomical discoveries or data has been continued during the year under the management of Mr. Ritchie, as before. Announcements have been made of the discovery of nine asteroids, five comets or suspected comets, and one new star. There have been sent to Europe or received therefrom twenty cable messages, and the number of telegrams sent in this country was two hundred and seventy. The Associated Press has been regularly notified of the facts thus distributed, and the information has been widely spread by means of the newspapers.

Height and Velocity of Clouds. — This subject has been studied during the year by Professor W. M. Davis, assisted by Mr. A. McAdie, who stationed themselves respectively on the east balcony of the Observatory and at the Jefferson Physical Laboratory. These stations were connected by telephone, and the observers were thus enabled to decide upon suitable portions of clouds for simultaneous observation with wooden altazimuth instruments. About three hundred pairs of measures were made in the spring of 1885 with generally satisfactory results. The altitudes determined varied from 2000 to 25,000 feet; for altitudes less than 8000 feet the variation between the measures was generally within five per cent of the height. In one instance, consecutive observations of a single cumulus cloud showed its base to be 4500 feet high; its summit rose from the height of 6750 to that of 7300 feet at the rate of 200 feet a minute, while the cloud drifted to S. 43° E. at the rate of 27½ miles an hour.

Additional Researches. — Several investigations have been carried on by the aid of the Rumford Fund. They include the determination of the amount of light reflected specularly and diffusely by various substances at different angles; the absorption of the wedge of shade glass used as a photometer for the large equatorial; the opacity of a series of photographic images employed as standards by Mr. W. H. Pickering in his photographic researches. The atmospheric refraction at large zenith distances was determined by several series of observations of the Sun and of *a Bootis* when setting. Various measures were also made of the amount of the atmospheric polarization.

During the summer over a thousand vertical angles were measured from the summits of Mt. Moosilauk and of Mt. Mansfield to determine the heights of the mountains of New Hampshire and Vermont by the method of geodetic levelling.

For three quarters of an hour after the explosion of Flood Rock was expected to take place, Professor Rogers watched a mercury surface with a microscope to detect the effect of the earthquake wave. Disturbances occurred beginning $3^m 14^s$ after the explosion and lasting nearly three minutes, which were apparently due to this cause. Various experiments were afterwards made to show that no local disturbance could have produced the same effect. This appears to be far the greatest distance to which the effects of an artificial explosion have been traced.

Exhibition of Instruments. — To permit the examination by the public of apparatus which would not generally be readily accessible, several instruments not required for immediate use were sent to the exhibition of the Massachusetts Charitable Mechanics' Association. Gold medals were awarded to two of these instruments, the meridian photometer and the almucantar.

PUBLICATIONS.

The principal publications of the year were Volume XIV., Part II. of the Observatory Annals, and the Catalogue of 1213 Stars which will form a part of Volume XV. The second part of Volume XIV. contains a discussion of observations by ancient and modern observers to determine stellar magnitudes, with an explanation of the methods by which the final results of these observations as given in Part I. of the same volume were ascertained. It also investigates various sources of error likely to affect the determination of the brightness of stars, and compares the general result reached with the meridian photometer and those obtained by other means.

The Catalogue of 1213 Stars, prepared by Professor Rogers, contains the results of observations which he carried on with the meridian circle from 1870 to 1879. The catalogue contains accurate places of many stars which, although moderately bright, had previously been only imperfectly observed; and also furnishes means for the more precise determination of the places of numerous fundamental stars.

The publications named below have appeared either as official communications from the Observatory or as papers prepared by its officers individually: —

Thirty-ninth Annual Report of the Astronomical Observatory of Harvard College.

Observations of Variable Stars in 1884. By Edward C. Pickering. Proc. Am. Acad. of Arts and Sciences, xx. 393.

A Photographic Study of the Nebula of Orion. By Edward C. Pickering. Id. xx. 407.

Third Report of the Committee on Standards of Stellar Magnitude. Edward C. Pickering, Chairman. Proc. Am. Assoc. for the Advancement of Science, 1885, p. 1.

Photometric Observations of Neptune at the Harvard College Observatory. By Edward C. Pickering. The Observatory, viii. 111.

Photometric Observations of Ceres (1), Pallas (2), and Vesta (4) at the Harvard College Observatory. By Edward C. Pickering. Id. viii. 238.

On a hitherto unexplained observation by Capt. Gilliss. By S. C. Chandler, Jr. Sidereal Messenger, iii. 315.

Photometric Measurements at the Harvard College Observatory of the Faintest Stars in the Charts constructed by Palisa. By Edward C. Pickering. Id. iv. 133.

Possibility of Errors in Scientific Research due to Thought Transference. By Edward C. Pickering. Amer. Soc. Psychical Research, i. 235.

Elements of Comet 1884 (Wolf). By S. C. Chandler, Jr. Astronomische Nachrichten, cx. 143.

Orbits of Meteors. By O. C. Wendell. Id. cxi. 189.

Dr. Gould's Star in Sculptor. By S. C. Chandler, Jr. Id. cxi. 333.

On the Latitude of Harvard College Observatory. By S. C. Chandler, Jr. Id. cxii. 113.

Comet-Meteor Radiants. By O. C. Wendell. Id. cxii. 321.

On the Right Ascensions of certain Fundamental Stars. By S. C. Chandler, Jr. Id. cxii. 381, cxiii. 17.

On the determination of the absolute length of eight Rowland Gratings. By W. A. Rogers. Proc. Am. Micros. Soc. for 1885, p. 151.

The Microscope in the Workshop. By W. A. Rogers. Proc. Soc. of Mechanical Engineers, Boston meeting, 1885, p. 1.

An Examination of the Standards of Length constructed by the Société Génevoise. By W. A. Rogers. Proc. Am. Acad., xx. 379.

A Preliminary Examination of Metal Thermometers. By W. A. Rogers. Am. Meteor. Journal, October, 1885, p. 252.

Description of a series of fifty Slides, illustrating the action of a diamond in ruling upon glass, presented to the Royal Microscopical Society of London. By W. A. Rogers. Journal R. Micros. Soc., October, 1885.

On a new form of Section-Cutter. By W. A. Rogers. Proc. Am. Soc. Microscopists, 1885, p. 191.

Additional Observations confirming the Relation: Metre des Archives = Imperial yard + 3.37027 inches. By W. A. Rogers. Proc. Assoc. for the Advancement of Science, 1884, p. 117.

To avoid the diminution of astronomical work, many desirable improvements in the general condition of the Observatory have been postponed. They will be undertaken whenever the financial condition of the institution will permit this to be done. Among them may be mentioned new facilities for the use of the large telescope, including probably the entire remounting of the instrument; the arrangement of books in the library, the binding of many valuable works, the provision of new shelving, and the completion of the card catalogue; the improvement of the drainage of the building and grounds and the protection of the woodwork by painting. A still more pressing need than any of these is the publication of material nearly ready for the press, which would occupy several volumes and is now exposed to the risk of destruction by accident. It is to be hoped that this want, at least, may be soon supplied.

EDWARD C. PICKERING, *Director*.

To the President and Fellows of Harvard College: —

Twenty-five years ago, on the 13th of November, 1860, the first section of the Museum building was inaugurated. It may not be out of place to recapitulate the changes it has passed through and to note the gradual transition of the Museum from a State institution to that of an independent department of Harvard College.

It was most natural that Professor Agassiz, with his European ideas of government support for scientific establishments, should primarily have looked to his adopted State for aid in carrying out his cherished plans. While no one was better fitted than he to interest a Legislature and to obtain liberal appropriations even in the most critical times, yet he also recognized fully the value of the American method of private endowments, and from the outset the Museum owed its material existence to a happy combination of State aid with personal interest. In time, however, with the growth of the Museum it became more and more difficult to hold together a special Board of Trustees. The intimate connection of the Museum with Harvard College suggested an easy remedy and the duties hitherto performed by the Trustees were relegated to the already existing governing boards of the University. By this consolidation with Harvard College, the Museum, while it lost the immediate support of the State, gained the good will and interest of the College students, the class upon whom it must eventually depend for its maintenance. To the graduates of Harvard interested in the study of nature the Museum must appeal for intellectual and material support. With the ever-increasing influence of the natural sciences, the field of the Museum becomes a large one, and men must be found who will devote themselves to its interests and keep it abreast of the requirements of a great University.

The State aid forms but a part either of the invested funds or of the expenditures incurred in behalf of the Museum. During the first decade of its existence its resources were naturally spent in forming the collections which in some fields of study are to make it a great scientific centre. This result was necessarily accomplished at a certain sacrifice of its educational aims, and the number of trained students sent out from the Museum as teachers during its earlier years, though undoubtedly great, was perhaps not as large as might have been expected from the pre-eminent qualifications of the founder himself as a teacher. Fortunately, the period of great outlays for collections, and for buildings and their equipment, is nearly past, and we may hope in the future to see the means of the Museum expended rather on its laboratories, its investigations, and its publications, than on material objects. There are no doubt many directions in which it would be advisable, for the sake of completeness, still further to increase our collections, but that may be left for the future benefactors of the establishment.

By a strange coincidence the foundation of the Museum dates from the publication of the "Origin of Species." Of course so powerful a movement in the scientific thought of the time could not fail to modify the problems which the institution was intended to illustrate and to solve. Yet the usefulness of the plans laid down for the Museum remains unimpaired by the new methods of treating questions of affinity, of origin, of geographical and geological distribution. Should the synoptic, the systematic, the faunal, and the palæontological collections cease to bear the interpretation given to them by the founder, their interest and importance, even for the advocates of the new biology, would not be one whit lessened. If the anatomical, embryological, synthetic, and other series presented by the pupil of Cuvier from his point of view, are differently considered to-day by the followers of Darwin, they may for this very reason have gained a general interest they did not formerly possess.

The plans of the founder have been realized, perhaps, far beyond his most sanguine expectations, and it has been reserved for his immediate successor to see the establishment of a prosperous school of Natural History, amply provided with laboratories, connected with a University, and recognizing in the administration of its trusts the claims of the College and of the advanced students, as well as those of the original investigator, and giving them ample opportunity to publish their theses or researches. The Museum has not, however, limited its usefulness to being a simple educational University Museum; it has become, to a certain extent, a public institution, intended for a larger circle.* Finally, it has not neglected the interests of specialists, and has accumulated extensive collections, conveniently stored, and easily accessible to all who are able to make a proper use of this material. These collections are in charge of a limited number of assistants, whose time is not wholly occupied by their administrative duties.

The publications of the Museum, in the shape of its eleven volumes of Bulletins and thirteen of Memoirs, give, with the addition of the Monographs thus far issued by workers at the Museum, a fair idea of the field covered by its various departments. It was but natural that during my administration special stress should have been laid on the Zoölogical Department, but it has been my aim not to allow the other departments to lag too far behind. Each branch should in its turn be properly developed and the plan of our buildings is fortunately such that, as fast as any department outgrows its quarters, a new section of the building may be added for its reception. There is no reason why, with the increase of the Geological, Anatomical, Geographical, or other Department of the Museum, suitable accommodations and room for expansion should not be provided.

The concentration of all the departments of Natural History within a single square will in the future be the natural result of the present plans. It will facilitate greatly the work of the different departments, prevent needless duplications, and increase the efficiency and economy by a central management.

The library has grown from a few hundred volumes to an important collection of biological works, and it is constantly increased by its exchanges, purchases, and donations; it now numbers over 17,500 volumes, exclusive of pamphlets and of the Whitney Library.

In 1860 the space covered by the first section of the building erected was eighty by sixty feet, and it contained in all sixteen rooms, used as lecture-room, laboratories, store-rooms, and exhibition-rooms. A visitor to the Museum in those early days would now find it difficult to recognize the rooms or their contents in the present arrangement. The ground covered by the building as it stands to-day is five times as great. There are no less than eighteen exhibition rooms,† with their corresponding galleries, of which eleven are open to the public. Thirty-two rooms are used for storage and quarters for special students and assistants. There are also a lecture-room, a Curator's room and office, eleven laboratories of biology and geology for College and advanced students, four rooms devoted to the library, and in the basement, in addition to boiler space, rooms intended as an aquarium and vivarium and for receiving freight; — making in all seventy-one rooms, the dimensions usually being thirty feet by forty, and twelve galleries.

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* The number of visitors is constantly increasing, and on Sundays the building is crowded.

† For an enumeration of the contents and uses to which our space is devoted see Report for 1882–83.

Of course this result has not been attained without a very considerable expenditure, and from the nature of the case a certain waste could not be prevented. In addition to the ordinary income of the Museum about half a million of dollars has been expended since 1875 for land, the buildings, the collections, and the publications.

We have probably reached the limit of a university organization for such an institution. While it undoubtedly is capable of indefinite expansion in the way of endowments for special professorships and assistants, it is doubtful if it is wise to expect or aim at any expansion beyond that which naturally comes from the demands of endowed chairs in a university. Original investigation has always been best promoted in connection with educational institutions, and in conformity with their demands museums should grow so fast and no faster, unless they are to become mere unwieldy and meaningless accumulations.

The difficulty if not impossibility of uniting with other institutions, so as to avoid repetitions which are often both useless and expensive, is a most discouraging feature in museum administration. No matter how the field may be preoccupied, each director will pride himself upon his success in having accomplished what probably has already been done by others. No doubt in a country covering so great an area, and with the dense population occupying some of the older States, a considerable amount of duplication is permissible. Yet our higher institutions of learning, or rather the numberless sickly children carefully nursed under the name of universities in every State of the Union, present a spectacle of scientific impracticability and a waste of resources foreign to the hard-headed and thrifty American methods in other directions. Germany with its old population boasts but a fraction of the number of our universities, where collections and laboratories in every department of science only lead a languishing existence and from want either of co-operation or of centralization do not produce results in the least commensurate with the expenditures. The good effects of genuine competition are felt as keenly in scientific matters as in business circles, but the mere paralleling for the sake of local prejudices of an older institution, if I may be allowed to borrow this expression from another field, is as disastrous as it is wasteful. No institution can abandon a well-considered and original policy, because a neighbor chooses to do the same thing somewhat later. Fortunately it matters little in scientific matters where the progress is made, as long as the thing is accomplished. Methods and aims have of late years changed so rapidly that the managers of older establishments may be pardoned at feeling somewhat discouraged if their plans have become antiquated before they are fully carried out.

A school of Natural History, such as was contemplated by the founder of this Museum, not only needs collections, libraries, an ample fund for its publications, a large staff of teachers, and the necessary buildings for storage and for its laboratories; but it also needs in the field and on the sea facilities for ever renewing its contact with nature itself, without which the work of its teachers would soon pass into that of the closet naturalist, and their instruction lose its stimulus. It is in this direction that we may yet hope to unite as far as practicable the forces in the field and on the sea-shore. In connection with the Laboratory of the United States Fish Commission, the universities of the country might found a seaside laboratory which would render unnecessary, except for special work, the various establishments already under way along our coast. Those States which from a geological or biological point of view present an interesting field of study could be visited in succession, in accordance with a well-considered plan. But the unfortunate conditions existing in many of our educational institutions renders the execution of such a plan a most delicate task.

To fill out the skeleton plan of our Museum as originally sketched, there yet remains the completion of the rooms devoted to the Marine Faunæ and the Palæontological collections. The expenditures necessary for this object are considerable. It will require at least $8000 to place the Atlantic and Pacific Rooms in a condition to be opened to the public, and the four Palæontological Rooms can scarcely be completed for a less sum than $25,000. Having for more than ten years borne the brunt of the expenditures necessary to erect the buildings, to accumulate the collections, and to place on exhibition what is now open to the public, I feel as if I ought to devote my time and such means as I may command in a different direction, and one perhaps more suited to my tastes. The development of the proper courses of instruction in Natural History at Cambridge, the fostering of original work among the Professors and Assistants of the Museum as well as among the students, and the providing of the means for the publication of such researches as may be of value, is a field quite large enough in addition to the carrying on of my own scientific researches, which have suffered more or less from the interruptions due to the claims of the management of so large an establishment. While this is to be my principal object, I shall not forget that, in addition to these departments of the Museum in which my interest was centred, there are others yet to be completed.

The claims of the Geological department for a larger share of the income of the Museum and for additional room cannot be much longer ignored, and there are many collections still to be acquired before we shall attain the proper proportions between the various departments of the Museum.

The following annual courses of instruction have been given at the Museum: —

A course in Biology, by Professors Goodale and Faxon.

An advanced course in Zoölogy, by Professor Faxon.

General Lectures by Professor Mark, who also had charge of the Embryological Laboratory. Professor Faxon took charge of the general Biological Laboratory, assisted by Mr. Nolen.

Professors J. D. Whitney, Shaler, and Davis gave the usual courses in Geology, Palæontology, and Physical Geography.

About nine hundred volumes have been added to the library of the Museum during the past year. This is exclusive of the books ordered by the College Library for the Natural History department.

The Europeo-Siberian Room has been opened to the public during the year. This, with the exception of the Marine Faunæ, completes the arrangement of exhibition-rooms devoted to zoölogical collections.

Collections of Fishes and of Echinoderms have been sent to the Museums of Stockholm, Bergen, Brussels, Paris, Copenhagen, London, Florence, Milan, Göttingen, Hamburg, and Vienna, to the Smithsonian, to New Haven, and to Professor Ward of Rochester. Exchanges have also been continued with our Australian correspondents.

For the High School of Gloucester a good typical collection of Mollusks and of Echinoderms was made by Messrs. Hamlin and Fewkes.

Materials from the Museum collections have been sent for study to the United States Geological Survey, to Dr. Dobson of the Zoölogical Society, to Professor Solas, Dr. Joubin, and to Professor Bütschli. A number of persons have received invoices from the Entomological department. In view of the number of specialists applying for types contained in the Museum, it will soon become impracticable for us to send out such material unless our working force can be increased, as this work is constantly making greater claims upon the Assistants, leaving them no time to attend to the regular work of their departments.

Dr. Meinert has returned the collection of Cymathoasæ sent him and the late Professor Schiödte for their Monograph of the group. Professor Lesquereux has returned to the Museum the large collection of fossil plants collected in 1883 by Professor Lakes of Golden, which he had kindly consented to examine and to identify. He has retained the more interesting species, to be figured in a memoir he is preparing for the United States Geological Survey on the fossil plants of the Dakota group. The spiders sent to Count Keyserling have also been returned to the Museum. Mr. P. H. Carpenter has returned the Stalked Crinoids obtained by the "Blake." Excellent progress is making with the reports on the "Blake" collections still unfinished and it is hoped that during the coming year the reports may all be published. The plates for Mr. Dall's Report are nearly completed, and Professor Goode and Dr. Beane hope within a very short time to send the manuscript of the descriptions of the collection of Fishes made in the Gulf of Mexico by the "Blake." With the completion of these publications it will be possible to devote more space than heretofore to the results of the special work of the Assistants and to the investigations of the Professors, Assistants, and students in the Museum Laboratories both at Cambridge and at Newport.

The work at Newport has been limited during this season to that on the Embryology of Echinoderms by Dr. Fewkes, — who has been quite successful in tracing the development of Echinarachnius and of Ophiurans, — and to my own work on the Embryology of Pelagic Fishes.

At the Museum Dr. Whitman has continued his previous work. Dr. Faxon has, in addition to his College instruction, devoted his time to the revision of the Astacidæ. Dr. Mark has nearly brought to completion the memoirs he is preparing on the development of Lepidosteus, while taking charge of the Embryological Laboratory. This laboratory will hereafter be well equipped for work, the Corporation having made an appropriation to supply it with the greater part of the necessary apparatus.

Dr. Farlow, although on leave of absence, spent a portion of his time at Cambridge at work on a Monograph of the North American Pucciniæ and Uromyces. For the completion of this memoir he collected a considerable amount of material during his trip to the West Coast. Dr. Farlow regrets that the Botanical department should not have a Museum where the larger and more striking forms of vegetation could be displayed. The greater part of the collection made by Dr. Farlow had to be reduced to the common herbarium size. In addition to some short notes, Dr. Farlow published in the Proceedings of the American Academy "Notes on some Species of Gymnosporangium," and a paper on the Synchytria in the Botanical Gazette.

Dr. Horn of Philadelphia has kindly spent a number of days at the Museum examining with Dr. Hagen the Le Conte collection, with special reference to the type specimens it contains.

Dr. Slade has completed the unpacking of the collections of Western Fossil Vertebrates brought together during the past years. There is a large amount of excellent material, but the bulk which has to be examined and rejected before the material suitable for the Museum can be set aside, makes this method of collection by professional collectors a very expensive one. It will be far cheaper and more for the interest of the Museum to purchase even at a comparatively high price a collection which has passed through this stage and represents only such specimens as are considered of value by an experienced palæontologist; — such a collection, for instance, as that brought together by a well-known palæontologist, containing the principal types of the greater number of our Western formations, representing many years of study at home and explorations in the field. An accession of this kind would form an invaluable addition to our North American fossils, and if this collection cannot be purchased by the friends of the Museum we must be gradually gathering a similar collection. To duplicate this collection would require at least ten years of active field work and an expenditure of over $75,000. But I may hope that some friend of the Museum will enable us to secure this important scientific material which ought not to be allowed to pass out of the country, but be kept together as representing the active work of an indefatigable investigator.

In the meanwhile, thanks to the permission granted us by Professor Marsh, casts have been taken of the more interesting and characteristic of the types described by him. These have now been received at the Museum and will in due time be placed on exhibition in their proper place with the Palæontological series. Want of means has prevented the Museum from securing the important collection of fossils brought together by the late Dr. Thomas Wright of Cheltenham. The collection was, in accordance with the terms of his will, offered to the Museum and we were very reluctantly compelled to decline the offer.

Mr. J. A. Allen, who for many years has taken charge of our collection of Birds and Mammals, has left the Museum, having accepted a similar position in the American Museum of Natural History. The Museum is most fortunate in having secured the co-operation of Mr. William Brewster, who has kindly consented to charge himself with the department formerly under Mr. Allen's care. Since his appointment, Mr. Brewster has made an examination of the mammal skins and, in accordance with the plan already carried out in other departments, of rejecting everything not of the first quality, he has materially reduced its bulk. The collection is now of great value and can readily be cared for. Before leaving, Mr. Allen finished labelling the specimens in the Indian, African, and European Rooms and he further revised the rapacious birds, the pigeons, and the grouse.

We have also lost the services of Mr. Paulus Roetter, who for the past eighteen years has been the indefatigable artist of the Museum and to whose skilful pencil the Museum publications owe the greater part of their illustrations during that time.

Mr. Lyman, who during the past two years could give but a most general supervision to his department, has now resumed his place at Cambridge.

The Museum is indebted to Messrs. Cabot and Slade for their interest in behalf of their respective departments. Dr. Slade has made a complete catalogue of the Osteological collections.

Professor Hamlin has unpacked and made a preliminary arrangement of our acquisitions of Fossil Invertebrates; they are now safely stored in the four rooms of the first floor devoted to that purpose. He has also transferred to the upper story the Fossil Vertebrates, which occupy two large rooms of that floor. While an immense amount of work still remains to be done on the collection of Fossils, they are all accessible and it will be a comparatively easy task to select from our stores the necessary series for the Palæontological Exhibition Rooms, and to place the collection in order for special students.

Mr. Garman has brought the collections of Fishes and Reptiles into perfect order and is gradually sending out our duplicates for distribution to other institutions. Professors Hamlin and Faxon have also condensed the alcoholic collections of Mollusks and Crustacea, and Mr. Fewkes has done the same with the Radiates. This now leaves in the basement only the alcoholic collections of Birds and Mammals, which have not yet been thoroughly examined; the other alcoholic collections having all received the revision they so greatly needed.

I may mention among the more important accessions, exchanges with the Museums of Bergen, Milan, Göttingen, and the British Museum. From the "Challenger" office we have received a series of duplicates of their Stalked Crinoids, in exchange for a similar series of the "Blake" expedition intended for the British Museum. From the Paris Museum we have received a collection of Patagonian birds, — a valuable addition to our American faunal series. We have continued a general system of exchanges with the Smithsonian, as well as to a limited extent our purchases from Professor Ward, the principal additions belonging to the African Faunal Room. We have also received in exchange casts from the Museums of Oxford and of Munich. A collection of Palæozoic Fossils was made by our collector under the direction of Mr. C. D. Walcott in the Eureka District, with the permission of Major Powell, the Director of the Geological Survey.

During my visit to the Sandwich Islands I devoted considerable time to the study of the recent and extinct reefs of the group, and am now preparing a short paper on the subject for the Museum Bulletin. I made an extensive and interesting collection of the various limestones characteristic of the modern and ancient reefs.

From the Peabody Museum of Salem we have received in exchange the most important addition to our Entomological department ever received. It contains a large number of types described by prominent American and European entomologists. I must confess that I accepted this collection with great reluctance as it will involve a considerable outlay in the way of boxes and cabinets, as well as a good part of the time of the Assistants of the department to preserve it from deteriorating. The same is true for other collections we have received and which do not all fill some important gap. A few such additions, entailing increased expense and care, will materially cripple the usefulness of the institution. It becomes a serious question how far we can allow our resources to be absorbed in the future by the care of collections which those who have brought them together are unable to give them, and thus be almost compelled to divert our means from the more legitimate outlays of the Museum without at the same time receiving the necessary assistance for such increased work.

I am happy to state that the invaluable collection of Indian Birds presented to the Museum by Mr. A. O. Hume of Simla is now at the British Museum. In a letter addressed to Prof. W. H. Flower, Director of the British Museum, Mr. Hume says, "Of the duplicates available, I would wish that the first set should be sent to Professor Agassiz." The Director of the British Museum also informs me that the selection of our series will, in accordance with the wishes of Mr. Hume, be made by Mr. Sharpe.

The Museum publications issued during the past academic year consist of two numbers of the Bulletin, and of two numbers of the Memoirs. The third number of the Embryological Monographs having absorbed nearly all the miscellaneous plates prepared for that work, this publication will for the present be discontinued. Professor Whitney has published for the Museum the first part of the

Lithological Studies by Professor Wadsworth, announced in the last Report.

The Report of Mr. Murray on the specimens of bottom deposits obtained by the "Blake" is now passing through the press, and will form one of the numbers of the Bulletin. Professor Faxon has also completed his "Revision of the Astacidæ," and I have myself in connection with Mr. Whitman completed the first part of an investigation on the "Embryology of Osseous Fishes." These two monographs have been printed and will be issued as numbers of the Museum Memoirs.

In addition to the investigations issued in the publications of the Museum, Professors Hagen, Shaler, Faxon, and Davis, and Messrs. Garman and Fewkes, have published in the Proceedings of the American Academy and other journals a number of papers. I have with Dr. Whitman printed in the Proceedings of the American Academy a preliminary account of our investigations on the development of Pelagic Fishes. I have also made excellent progress towards completing the final Report of the "Blake Cruises." Thirteen chapters are printed, leaving unfinished only the chapters devoted to the zoölogical results, which await the final reports of two or three special investigators. Professor Huxley has kindly sent me for this Report drawings of the Spirula dredged by the "Blake," which had been sent to him for use while preparing his Report on the specimens of the same genus collected by the "Challenger."

The first part of the final Report of Mr. P. H. Carpenter on the Crinoidea of the "Challenger" has been published.* This includes also the Stalked Crinoids of the "Blake" which had been sent to Sir Wyville Thomson, who intended to incorporate them in his Report on the Challenger species. After his death, the Challenger as well as the Blake collections were transferred to Mr. Carpenter, who described the Blake material in connection with that of the Challenger, so that his report is a complete monograph of the recent Stalked Crinoids. The material available for some of the species of Pentacrinus was very abundant and of this Mr. Carpenter has made admirable use. The monograph includes not only a description of the various species, but also a most thorough comparison of the Neocrinoids with the Palæocrinoids. The species collected by the Blake have supplied valuable material in the description of some of the Stalked Crinoids included in the report on the Challenger expedition Crinoidea.

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* Report upon the Crinoidea collected during the Voyage of H.M.S. "Challenger" during the Years 1873–76. By P. Herbert Carpenter, D. Sc., Assistant Master at Eton College. pp. i.–xxii., 1–442, Pls. I.–LXII. Zoöl. Vol. XI. London, 1884.

The collection of the Blake Myzostomida sent to Dr. L. von Graff for study has been returned by him. The result of his examination of the Blake species has been incorporated in the final report on the Challenger Myzostomida published in 1884.* A preliminary report of the Blake species has already appeared in the tenth volume of the Museum Bulletin. In addition to the twenty-eight species of the Blake expedition, and the thirty-three of the Challenger, Dr. Graff's report is a complete monograph of this small group of animals, based upon the collections of the principal Museums of Europe.

Professor E. Perrier of the Jarden des Plantes has published in the Nouvelles Archives du Muséum his final report on the Starfishes of the Blake, of which the administration of the Jardin des Plantes kindly sent us fifty copies for the use of the Museum.† Professor Perrier having already published, in 1875 and 1876, a general Revision of the Starfishes, based upon the examinations of the collections of the principal Museums of Europe and of our own, we could not have intrusted the Blake collections to better hands. Professor Perrier's memoir describes forty-six new species from the region explored by the "Blake." There were known previously from the same district only twenty-seven species, and the species first brought to light by the "Blake" have added nearly one-tenth to the number of species of Starfishes known.

It would be advisable, if possible, to change the somewhat cumbrous official name by which the Museum has been known for the past twenty-five years into a simpler and at the same time more comprehensive title, according better with the extended field now covered by the Museum.

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* Report on the Myzostomida collected during the Voyage of H.M.S. "Challenger" during the Years 1873–76. By Dr. L. von Graff. pp. 1–82, Pls. I.–XVI. London, 1884.

† Mémoire sur les Étoiles de Mer recueillies dans la Mer des Antilles et le Golfe du Mexique durant les Expéditions de dragage sous la Direction de M. Alexandre Agassiz. Par Edmond Perrier, Professeur Administrateur au Muséum d'Histoire Naturelle de Paris. Nouvelles Archives du Muséum. Paris, 1884. Tom. VI. pp. 127–276.

ALEXANDER AGASSIZ.

Cambridge, October 1, 1885.

APPENDIX.

I.

RESIGNATIONS.

Alexander Agassiz, Fellow of the Corporation, October 24, 1884.

Joseph Henry Beale, Proctor, October 24, 1884.

Nathan Frederic Merrill, Proctor and Assistant in Organic Chemistry, January 12, 1885.

Joseph Pearson Oliver, Clinical Instructor in Diseases of Children, May 11, 1885.

Charles Follen Folsom, Assistant Professor of Mental Diseases, May 25, 1885.

Frederic Lutz, Tutor in German, September 30, 1885.

Charles Armstrong Snow, Proctor, September 30, 1885.

Andrew Woods, Proctor, September 30, 1885.

II.

APPOINTMENTS.

[UNLIMITED, OR FOR TERMS LONGER THAN ONE YEAR.]

Ephraim Whitman Gurney, to be Fellow of the Corporation, November 5, 1884.

Benjamin Osgood Peirce, to be Assistant Professor of Mathematics and Physics for five years from September 1, 1884, October 24, 1884.

Crawford Howell Toy, to be a member of the Council of the Library, November 5, 1884.

William James, to be Professor of Philosophy, February 16, 1885.

Josiah Royce, to be Assistant Professor of Philosophy for five years from September 1, 1885, March 30, 1885.

Charles Joyce White, to be Professor of Mathematics, May 11, 1885.

Le Baron Russell Briggs, to be Assistant Professor of English for five years from September 1, 1885, May 11, 1885.

Adolphe Cohn, to be Assistant Professor of French for five years from September 1, 1885, May 11, 1885.

Winfield Scott Chaplin, to be Professor of Engineering, June 8, 1885.

James Mills Peirce, to be Perkins Professor of Astronomy and Mathematics, June 8, 1885.

William Morris Davis, to be Assistant Professor of Physical Geography for five years from September 1, 1885, June 18, 1885.

Robert Henri Harrison, to be Instructor in Anatomy and Assistant Surgeon in the Veterinary Hospital for three years from September 1, 1884, October 24, 1884.

William Coolidge Lane, to be Assistant in the Library, in charge of the Catalogues, November 24, 1884.

William Hopkins Tillinghast, to be Assistant in the Library, in charge of the Ordering department, November 24, 1884.

William Hopkins Tillinghast, to be Editor of the next Quinquennial Catalogue, January 12, 1885.

John Humphreys Storer, to be Curator of Coins in the College Library, February 9, 1885.

Harold Whiting, to be Instructor in Physics, May 25, 1885.

Nathan Frederic Merrill, to be Proctor, October 6, 1884.

Samuel Atkins Eliot, to be Proctor, October 6, 1884.

George William Brown, to be Proctor, October 6, 1884.

John Wesley Houston, to be Proctor, October 20, 1884.

Edward Cummings, to be Proctor, November 24, 1884.

George William Sawin, to be Proctor, February 9, 1885.

Frank Gaylord Cook, to be Proctor, March 30, 1885.

[FOR ONE YEAR OR LESS.]

For 1884–85.

Alfred Church Lane, to be Instructor in Mathematics, October 6, 1884.

William Bradford Shubrick Clymer, to be Instructor in English, October 6, 1884.

Benjamin Marston Watson, to be Instructor in Horticulture, October 6, 1884.

Daniel Taylor Hinckley, to be Superintendent of the Bussey Farm, October 6, 1884.

Hollis Webster, to be Instructor in Botany, October 6, 1884.

James Métivier, to be Instructor in French, October 6, 1884.

Samuel Atkins Eliot, to be President's Secretary, October 6, 1884.

Nathaniel Thayer Kidder, to be Instructor in Botany, October 20, 1884.

William Benjamin Goldsmith, to be Clinical Instructor in Mental Diseases, November 5, 1884.

George Anthony Hill, to be Instructor in Engineering, February 9, 1885.

Charles Robert Sanger, to be Assistant in Chemistry, October 6, 1884.

Nathan Frederic Merrill, to be Assistant in Organic Chemistry, October 6, 1884.

William Wallace Fenn, to be Assistant in English, October 6, 1884.

Otis Kimball Newell, to be Assistant in Anatomy, October 6, 1884.

James Gray Lathrop, to be Assistant in the department of Physical Training, October 24, 1884.

Edward Cummings, to be Assistant in Rhetoric, November 24, 1884.

Herman Frank Vickery, to be Assistant in Clinical Medicine, January 12, 1885.

For 1885–86.

Harold North Fowler, to be Instructor in Greek, April 27, 1885.

William Bradford Shubrick Clymer, to be Instructor in English, May 11, 1885.

Kuno Francke, to be Instructor in German, May 11, 1885.

James Métivier, to be Instructor in French, May 11, 1885.

Frank William Taussig, to be Instructor in Political Economy, May 11, 1885.

Albert Bushnell Hart, to be Instructor in American History, May 11, 1885.

Oliver Whipple Huntington, to be Instructor in Mineralogy, May 11, 1885.

Farley Brewer Goddard, to be Instructor in Greek and Latin, May 11, 1885.

George William Sawin, to be Instructor in Mathematics, May 11, 1885.

Frank Nelson Cole, to be Lecturer on the Theory of Functions, May 11, 1885.

Arthur Gordon Webster, to be Instructor in Mathematics, May 11, 1885.

Harold Broadfield Warren, to be Instructor in Drawing, May 25, 1885.

Francis Greenwood Peabody, to be Acting Dean of the Divinity School, May 25, 1885.

Lewis Edwards Gates, to be Instructor in Forensics, May 25, 1885.

Daniel Dennison Slade, to be Lecturer on Comparative Osteology, June 18, 1885.

Robert Sanderson, to be Instructor in French, September 30, 1885.

John Graham Brooks, to be Lecturer on Socialism, September 30, 1885.

Edward Cummings, to be Assistant in Rhetoric, April 27, 1885; and Assistant in Elocution, May 25, 1885.

Arthur Messinger Comey, to be Assistant in the Chemical Labratory, September 30, 1885.

Nathan Frederic Merrill, to be Assistant in the Chemical Laboratory, September 30, 1885.

Thaddeus William Harris, to be Assistant in Botany, September 30, 1885.

Samuel Holmes Durgin, to be Lecturer on Hygiene, June 8, 1885.

Henry Parker Quincy, to be Lecturer in Histology, June 8, 1885.

Frederick Cheever Shattuck, to be Instructor in the Theory and Practice of Physic, June 8, 1885.

Charles Sedgwick Minot, to be Instructor in Histology and Embryology, June 8, 1885.

Thomas Morgan Rotch, to be Instructor in Diseases of Children, June 8, 1885.

Charles Harrington, to be Instructor in Hygiene, June 8, 1885; and Assistant in Chemistry, June 8, 1885.

John Homans, to be Clinical Instructor in Diagnosis and Treatment of Ovarian Tumors, June 8, 1885.

Theodore Willis Fisher, to be Clinical Instructor in Mental Diseases, June 8, 1885.

Francis Boott Greenough, to be Clinical Instructor in Syphilis, June 8, 1885.

Oliver Fairfield Wadsworth, to be Clinical Instructor in Ophthalmoscopy, June 8, 1885.

Clarence John Blake, to be Clinical Instructor in Otology, June 8, 1885.

John Orne Green, to be Clinical Instructor in Otology, June 8, 1885.

James Read Chadwick, to be Clinical Instructor in Diseases of Women, June 8, 1885.

Abner Post, to be Clinical Instructor in Syphilis, June 8, 1885.

Elbridge Gerry Cutler, to be Clinical Instructor in Auscultation, June 8, 1885.

William Whitworth Gannet, to be Clinical Instructor in Auscultation, June 8, 1885.

William Benjamin Goldsmith, to be Clinical Instructor in Mental Diseases, June 8, 1885.

Samuel Gilbert Webber, to be Clinical Instructor in Diseases of the Nervous System, June 22, 1885.

James Jackson Putnam, to be Clinical Instructor in Diseases of the Nervous System, June 22, 1885.

Arthur Tracy Cabot, to be Clinical Instructor in Genito-Urinary Surgery, June 22, 1885.

Francis Henry Williams, to be Instructor in Materia Medica and Therapeutics, June 22, 1885.

Francis Augustine Harris, to be Demonstrator of Medico-Legal Examinations, June 8, 1885.

George Webb West, to be Demonstrator of Bandaging and Apparatus, June 8, 1885.

Harold Clarence Ernst, to be Demonstrator in Bacteriology, June 8, 1885.

Samuel Jason Mixter, to be Assistant Demonstrator of Anatomy, June 8, 1885.

Edward Hickling Bradford, to be Assistant in Clinical Surgery, June 8, 1885.

Francis Henry Davenport, to be Assistant in Gynaecology, June 8, 1885.

George Minot Garland, to be Assistant in Clinical Medicine, June 8, 1885.

Joseph Weatherhead Warren, to be Assistant in Physiology, June 8, 1885.

William Whitworth Gannett, to be Assistant in Pathological Anatomy, June 8, 1885.

Charles Montraville Green, to be Assistant in Obstetrics, June 8, 1885.

William Carroll Emerson, to be Assistant in Chemistry, June 8, 1885.

Walter Joseph Otis, to be Assistant in Operative Surgery, June 8, 1885.

Otis Kimball Newell, to be Assistant in Anatomy, June 8, 1885.

Herman Frank Vickery, to be Assistant in Clinical Medicine, June 8, 1885.

Horatio Cook Meriam, to be Instructor in Operative Dentistry, June 8, 1885.

Allston Gray Bouvé, to be Instructor in Operative Dentistry, June 8, 1885.

Frank Perrin, to be Instructor in Operative Dentistry, June 8, 1885.

Daniel Frank Whitten, to be Instructor in Operative Dentistry, June 8, 1885.

Jere Edmund Stanton, to be Instructor in Oral Pathalogy and Anatomy, June 8, 1885.

Edward Earl Hopkins, to be Instructor in Operative Dentistry, June 8, 1885.

Joseph Ellsworth Waitt, to be Demonstrator in Mechanical and Operative Dentistry, June 8, 1885.

Merle St. Croix Wright, to be Librarian of the Divinity School, June 18, 1885.

Henry W. Torrey, **Wolcott Gibbs**, **Francis J. Child**, **Charles E. Norton**, **George L. Goodale**, **Crawford H. Joy**, to be members of the Council of the Library for three years from January 1, 1885, January 12, 1885.

William Gray, **Henry J. Bigelow**, **Henry Lee**,	to be Trustees of the Museum of Fine Arts for one year from January 1, 1885, January 12, 1885.

III.

[EXTRACT FROM CORPORATION RECORDS.]

October 27, 1884.

Voted, That Mr. Agassiz's resignation be accepted in accordance with his wishes.

Voted, That the President and Fellows deeply regret the withdrawal of Mr. Agassiz from the Board.

That the wide range of his sympathies and interests, the confidence and affection which he inspired, and the varied information which he possessed both as a man of business and a man of science, made his services as a Fellow of singular value to the University.

That his great gifts within the past thirteen years to the Scientific departments, and especially to the Museum of Comparative Zoölogy, which amount to more than half a million of dollars, make him one of the chief benefactors of the University and entitle him to its profound gratitude.

IV.

HONORS AT GRADUATION.

Honors of two grades — *Honors* and *Highest Honors* — will be given at graduation for great proficiency in any one of the following subjects: Semitic Languages; Sanskrit; Classics; English; Modern Literature; Philosophy; Political Science; History; Music; Mathematics; Physics; Chemistry; Natural History.

The qualifications required for Honors in these subjects respectively are as follows: —

In *Semitic Languages* the candidate must have taken five courses, and must also have performed such additional work in the department as may be required of him.

In *Sanskrit* the candidate must have received Second-Year Honors in Classics, and must have taken the three courses in Sanskrit and one of the following: Greek and Latin 1 (Comparative Philology), History 16, the course in Old Iranian, and the course in Pāli.

In *Classics* the candidate must have taken six elective courses, with the liberty of substituting any course in Sanskrit, or Course 10 in Fine Arts, for one classical course; must be able to read ordinary Greek and Latin at sight and to write Greek and Latin prose; and must have taken Second Year Honors in Classics; but students admitted to college as Seniors may on the recommendation of the classical instructors, upon evidence of good work done by them elsewhere, be excused from the examinations for Second-Year Honors.

In *English* the candidate must have taken six courses, one of which must be an elective course in English writing.

In *Modern Literature* the candidate must be able to read French and German with facility at sight, and must have taken two elective courses in English, two in French, and two in German. These he may choose from among the following: — in English, 1, 2, 7, 8, 11 (three courses and two half-courses); in French, 3, 4, 5, 6 (four courses); in German, 3, 5, 6, 7 (four courses). Course 3 in Italian or Course 3 in Spanish may be substituted for any French or any German course above-mentioned; but no substitution will be allowed for English. The special examination of every candidate will include a thorough examination in the works of some author to be determined with the approval of the committee of examiners.

In *Philosophy* the candidate must have taken six courses, including Courses 6 and 7, with the liberty of substituting Course 8 in Greek for one other course in Philosophy.

In *Political Science* the candidate must have taken six courses, selected from among the following: Political Economy 1, 2, 3, 4, 5, 6, 7, 8 (four courses and four half-courses); History 11, 12, 13, 14, 15, (five courses); Roman Law 1, 2, 3 (one course and two half-courses); provided, however, that of the courses selected one shall be in Political Economy, one in Constitutional Law (either History 13 or 14), and one in Jurisprudence (either History 15 or a course in Roman Law).

In *History* the candidate must have taken six courses, with the liberty of substituting for courses in History, one in Political Economy and one in Roman Law.

In *Music* the candidate must have taken five courses, and must also pass an examination in Acoustics.

In *Mathematics* the candidate must have received Second-Year Honors in Mathematics, must in addition have taken four advanced courses, and must also present a satisfactory thesis.

In *Physics* the candidate must have taken Course 2 in Mathematics, Courses 2, 4, and 5 in Physics, and two other courses either in Physics, Mathematics, or Chemistry, and must also present a satisfactory thesis.

In *Chemistry* the candidate must have taken five courses, and must pass an examination in Chemical Philosophy.

In *Natural History* the candidate must have taken six courses, with the liberty of substituting Course 2 in Chemistry for one course in Natural History. Advanced work in the Summer School of Geology may be counted toward Honors as equivalent to Course 16, but will not be counted toward the degree of Bachelor of Arts.

In every case the candidate must pass with distinction the regular examinations on the courses required of him as above; must also, near the close of the Senior year, pass a special examination, conducted by a committee of the Faculty, to test the range and accuracy of his knowledge of the subject in which he offers himself for Honors; and must present such Theses as may be required of him.

V.

SECOND-YEAR HONORS IN CLASSICS AND MATHEMATICS.

Second-Year Honors of two grades — *Honors* and *Highest Honors* — are open to Sophomores and Juniors, and to Seniors who intend to be candidates for Final Honors in some year after graduation; they are open to Freshmen only by special vote of the Faculty.

These Honors are awarded by the Faculty, on the recommendation of special committees of examiners, and the award is printed with the annual Rank Lists and in the University Catalogue.

I. CLASSICS. — Second-Year Honors in *Classics* are awarded on two conditions. The first condition is distinguished excellence in classical studies amounting to *four courses*. The second condition consists in passing with distinction a special examination, directed to testing

(*a*) The candidate's ability to translate Greek and Latin at sight. (The passages set for this purpose will be taken from the following writers only: Homer, Aeschylus, Sophocles, Euripides, Aristophanes, Thucydides, Herodotus, Xenophon, Lysias, Plato, Demosthenes; Terence, Catullus, Virgil, Horace, Tibullus, Propertius, Ovid, Caesar, Cicero, Nepos, Sallust, Livy, Velleius Paterculus, Tacitus.)

(*b*) His ability to write Greek and Latin prose.

(*c*) His knowledge of Greek and Roman history, antiquities, and mythology; of Greek and Roman literary history, so far as relates to the writers named above; and of Greek and Latin Grammar.

This special examination will be held near the end of the Academic year.

II. MATHEMATICS. — Second-Year Honors in *Mathematics* are awarded on two conditions: (1) distinguished excellence in such mathematical courses as may be approved for candidates for these honors; and (2) passing with distinction a special examination which may be extended to cover the whole mathematical knowledge of the candidates. The special examination will be held near the end of the Academic year.

The following courses are those regularly approved for candidates for Second-Year Honors in Mathematics: —

1. (*For students who have passed the elective admission examination in Mathematics.*) Courses *C*, *G* (or *D* as given in 1884–85), 2, and 3 (or 4 with the part of Course 8 which treats of the Theory of Equations).

2. (*For students who have not passed the elective admission examination in Mathematics.*) Courses *A* and *B* (or Course *A* alone, as given in 1884–85), *G* (or *D* as given in 1884–85), *E*, 2, and 3 (or 4 with the part of Course 3 which treats of the Theory of Equations).

Substitutions for these courses may be allowed, on special petition.

VI. AGE OF STUDENTS WHO ENTERED THE FRESHMAN CLASS OF HARVARD COLLEGE 1856—1885 INCLUSIVE.

Year.	14–15.	15–16.	16–17.	17–18.	18–19.	19–20.	20–21.	21–22.	22–23.	23–24.	24–25.	25–26.	26–27.	27–28.	28–29.	29–30.	Average Age.	No. admitted.
1856	4	16	44	34	29	7	1	4		3		2					17 yrs. 7 3/16 mos.	144
1857		6	31	27	25	8	3	3		5							17 ,, 11 1/12 ,,	108
1858		7	23	43	30	11	3	2	2	3							17 ,, 11 3/7 ,,	124
1859		6	26	56	31	14	5	3	1	1	1						17 ,, 11 ,,	144
1860		9	26	38	33	14	9	1	4	2							18 ,, 1 1/2 ,,	186
1861		3	24	50	23	13	3	5	1	2			1		1		18 ,, 1 3/4 ,,	126
1862		2	19	41	30	15	10	3	2				1				18 ,, 3 7/16 ,,	123
1863	1	2	22	38	36	13	5	7		2			1		1		18 ,, 4 2/5 ,,	128
1864	1		14	30	18	19	6	3	1	2	1				1	1	18 ,, 9 1/8 ,,	97
1865		5	19	51	28	23	9	1	5		1		1				18 ,, 8 7/12 ,,	143
1866		6	19	38	46	23	8		3	1							18 ,, 2 5/12 ,,	144
1867			22	56	55	24	7	9	3	1	1						18 ,, 5 1/5 ,,	178
1868			16	48	37	22	13	2	1	2							18 ,, 5 1/8 ,,	141
1869		2	15	49	52	22	11	6						1	1		18 ,, 5 3/8 ,,	159
1870		3	19	76	53	29	11	4	4	1	1			1			18 ,, 4 4/5 ,,	208
1871		6	24	59	62	28	16	4	1	1							18 ,, 3 1/2 ,,	201
1872		2	20	51	65	29	12	4	2	1				1			18 ,, 5 7/10 ,,	188
1873	1	2	19	52	76	43	17	11	3	4	2	5		1			18 ,, 10 2/3 ,,	236
1874	1	2	19	61	58	42	7	4	1	2	2	2		1			18 ,, 6 4/5 ,,	202
1875	1	1	12	78	93	49	10	7	3	4							18 ,, 6 5/6 ,,	258
1876		1	12	58	60	53	20	7	2	2	1		1				18 ,, 9 ,,	217
1877		2	16	52	80	58	23	9	6	3	1						18 ,, 9 3/5 ,,	245
1878		2	14	52	78	45	22	7	9		1						18 ,, 9 1/8 ,,	280
1879		1	16	49	86	53	19	15	4	1	1	1	1	1			18 ,, 11 ,,	248
1880		1	12	52	84	58	24	9	3	4	1	2	1	1			18 ,, 11 2/3 ,,	247
1881		8	10	38	78	53	31	10	8	1	1					(82)	19 ,,	230
1882	1	8	11	58	89	60	28	12	4	5	1	2				1	19 ,,	275
1883			16	64	97	58	22	7	6	2	1						18 ,, 9 ,,	278
1884	1		9	58	88	66	24	5	4	1	4						18 ,, 9 7/10 ,,	260
1885		1	9	53	82	46	30	4	5	3	2	1					18 ,, 10 1/8 ,,	286

VII.

Table of Schools and Colleges from which young men actually entered Harvard College from 1876 to 1885 inclusive, with the number that entered from each institution in each year.

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Academy of Protestant Episcopal Church, Phila.	.	.	.	1						
Acadia College, Wolfville, Nova Scotia	1	2	.	2	.	2	1	.	.	1
Adams Academy, Quincy	11	9	22	13	13	12	13	19	11	1
Adelphi Academy, Brooklyn, N. Y.	.	.	2	.	.	.	.	.	.	1
Albany, N. Y., Academy	1	.	1	.	.	.	.	.	1	
Albany, N. Y., High School	.	.	.	.	.	.	1	1		
Alfred, N. Y., University	.	.	.	.	.	.	.	1		
Amherst College	1	1	.	.	.	1	.	.	.	1
Antioch College, Yellow Springs, Ohio	.	.	.	.	1					
Appleton Academy, New Ipswich, N. H.	.	.	1							
Arlington, Cotting High School	.	2	.	.	.	1	1	1	2	2
Ashland High School	1									
Auburn, Me., Edward Little High School	.	.	.	1						
Baldwin University, Berea, Ohio	1	2	.	1						
Bangor, Me., High School	.	.	.	1						
Bangor, Me., Theological Seminary	.	.	.	.	1					
Barre Academy	.	.	.	.	.	1				
Bath, Me., High School	.	.	1							
Baugher's Academy, Hanover, Pa.	.	.	.	.	.	.	.	1		
Berkeley Gymnasium, San Francisco, Cal.	.	.	.	.	.	.	.	1		
Berkeley School, Boston	.	.	.	.	.	.	.	.	.	1
Berkeley School, New York	.	.	.	.	.	1	.	1	.	6
Bethany College, W. Va.	.	.	.	.	.	.	.	.	.	1
Boston Latin School	10	21	13	18	23	17	17	20	21	17
Boston University	.	1	1	.	.	.	.	.	1	
Brackett Academy, Greenland, N. H.	.	.	.	.	.	.	1			
Bridgewater High School	.	.	.	.	.	2				
Bristol Academy, Taunton	.	.	.	.	.	1	1	8	.	3
Bromfield School, Harvard	.	.	.	.	.	.	.	.	1	
Brookfield High School	.	.	.	.	.	.	.	1		
Brookline High School	8	2	5	5	1	2	2			
Brooks Academy, Cleveland, Ohio	.	1	2	1	1					
Brown, H. H., Private School, Philadelphia, Pa.	.	.	.	.	.	.	.	1		
Brown University, Providence, R. I.	.	.	.	.	.	.	1	.	.	1
Browne & Nichols, Private School, Cambridge	.	.	.	.	.	.	.	.	.	1
Buffalo, N. Y., Latin School	.	.	.	.	.	.	.	.	2	1
Buffalo, N. Y., Central High School	.	.	.	.	.	.	1	.	1	
Buffalo, N. Y., Classical School	1									
Butler University, Indianapolis, Ind.	.	.	.	1						
Calais, Me., High School	.	.	1							
Cambridge High School	10	18	15	10	7	11	8	8	5	11
Castine, Me., High School	.	.	.	1	.	.	.	1		
Chadwick & Pye, Boys' Prep. Sch., Brooklyn, N. Y.	.	.	.	2	.	.	1			
Charlier Institute, New York	.	1	.	.	.	.	1			
Chase, R. H., Private School, Philadelphia, Pa.	.	.	.	.	1	.	8	2	1	
Chauncy Hall School, Boston	1	8	1	5	1	2	3	2	1	2
Chelsea High School	2	.	1	1	.	2	2	.	2	

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Chicago, Ill., High School	1	.	.	.	.	.	.	.	1	
Christian College, Monmouth, Oregon	.	.	.	.	.	.	1			
Cincinnati, Ohio, Hughes High School	.	.	1	1	1	.	.	.	.	1
Cincinnati, Ohio, Woodward High School	.	.	.	.	.	.	1	1	.	3
Cleveland, Ohio, Academy	.	.	.	.	.	.	.	.	2	
Cleveland, Ohio, Central High School	.	.	1	.	.	1	2	1		
Cleveland, Ohio, West High School	1	2	3	.	.	.	1	.	1	1
Colby Academy, New London, N. H.	.	.	.	.	.	.	1			
Colby University, Waterville, Me.	.	.	.	.	.	1				
College of the City of New York	.	.	3	2	.	.	.	.	.	3
College of New Jersey, Princeton, N. J.	1	.	.	1	1	.	.	.	2	
Collegiate and Polytech. Institute, Brooklyn, N. Y.	2	2	.	.	1	2	1	1	1	1
Columbia College, New York	.	.	.	.	.	.	.	1	1	
Columbian University, Washington, D. C.	.	.	1	.	.	.	1			
Concord High School	.	.	1	1	2	.	3	2		
Cornell University, Ithaca, N. Y.	.	.	1	.	1					
Corning, N. Y., Free Academy	.	.	.	1	.	.	1			
Cutler, A. H., Private School, New York	1	.	2	.	2	2	1	4	1	
Dearborn Morgan School, Orange, N. J.	.	.	.	.	.	.	.	.	1	
Decatur, Ill., High School	.	.	.	.	.	.	.	.	.	2
Dedham High School	1									
Delaware College, Newark, Del.	.	.	.	1	.	.	.	.	1	
Delaware Literary Institute, Franklin, N. Y.	1									
Denver, Col., High School	.	.	.	.	.	.	.	.	1	
Derby Academy, Hingham	.	.	.	.	.	.	1			
De Veaux College, Suspension Bridge, N. Y.	2	.	1	1	3					
Dickinson College, Carlisle, Pa.	.	.	.	.	.	1				
Dorchester High School	1	1	.	.	.	.	1			
Dummer Academy, South Byfield	.	.	.	.	.	.	.	1	.	3
Eaglenest, Newburyport	.	.	2							
East Maine Conference Seminary, Bucksport	.	.	.	.	.	.	.	.	.	1
Eayrs, Wm. N., Private School, Boston	2	2	2	4						
Edgartown High School	.	.	1							
Emerson Institute, Washington, D. C.	.	.	.	2	1	.	1	1	4	2
Englewood, Ill., High School	.	.	.	2						
Erie, Pa., Central High School	.	.	.	.	1					
Eton College, England	.	.	.	.	.	1	.	.	1	
Everson, D. S., School for Boys, New York	2	.	.	1	1	.	1	.	.	1
Fairview Institute, Saratoga Springs, N. Y.	.	.	.	1	1					
Fall River High School	.	1	1	.	.	.	2			
Fitchburg High School	.	.	.	.	2					
Fort Wayne, Ind., Central Grammar School	.	.	.	1	.	1				
Framingham High School	.	.	1	.	.	.	1	.	.	1
Franklin and Marshall College, Lancaster, Pa.	.	.	.	.	.	1				
Friends' Academy, New Bedford	1	3	2	6	.	1	.	.	2	2
Gardner High School	.	1	.	.	.	.	1			
Gibbens and Beach, Private School, New York	.	1	.	.	1	1	2	1		
Glen's Falls, N. Y., Academy	1									
Gloucester High School	.	.	2	.	.	.	2	1	2	3
Goddard Seminary, Barre, Vt.	.	.	.	1						
Goff, C. B., Classical School, Providence, R. I.	.	.	.	.	1					
Griswold College, Davenport, Iowa	.	.	.	.	.	1				
Gunnery School, Washington, Conn.	.	.	.	.	.	.	1	.	3	
Hanover College, Ind.	.	.	.	.	.	.	.	.	1	
Hamilton College, Clinton, N. Y.	3	.	.	.	.	.	.	.	1	
Harrow, England	.	.	.	.	1					
Hartford, Conn., High School	.	.	.	.	.	.	1	1		
Harvard College Graduate Student	.	.	.	.	.	.	.	.	1	

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Harvard College Unmatric. or Special Student	.	.	.	.	.	1	5	8	9	6
Harvard Divinity School, Cambridge	.	.	.	.	1	.	.	.	1	
Harvard Medical School, Boston	.	.	.	.	.	.	.	.	.	1
Harvard School, Chicago, Ill.	.	.	.	.	.	.	1	.	1	
Haverford College, Pa.	4	.	3	.	.	2	1	1	2	1
Haverhill High School	4	1	2	1	1	2	2	.	1	4
Hingham High School	.	.	.	.	.	.	.	.	1	
Hobart College, Geneva, N. Y.	.	1	.	.	.	.	.	.	2	
Holyoke High School	.	.	.	.	1					
Hopkinson, John P., Private School, Boston	10	10	7	9	11	4	14	14	18	10
Hopkinton High School	.	.	1							
Hyde Park High School	.	.	.	.	.	.	1	1		
Hyde Park, Ill., High School	.	.	.	.	.	1	.	.	.	1
Illinois State Normal University, Normal, Ill.	.	.	.	.	.	.	1	1	2	
Indianapolis, Ind., Classical School	.	.	.	1	.	1	1	1	.	1
Indianapolis, Ind., High School	.	.	.	.	.	.	.	.	.	1
Indiana University, Bloomington, Ind.	.	.	.	.	.	.	2			
Jarvis Hall, Denver, Col.	.	.	.	.	.	.	.	.	.	1
Johns Hopkins University, Baltimore, Md.	.	.	.	.	.	.	1	.	1	
Keene, N. H., High School	.	.	.	.	2					
Kendall, Joshua, Private School, Cambridge	5	3	6	2	.	2	1	2	2	2
Kentucky University, Lexington, Ky.	.	1	.	.	2					
Kentucky Wesleyan College, Millersburg, Ky.	.	.	.	.	.	.	.	1		
Keystone Academy, Factoryville, Pa.	.	.	.	.	.	.	.	.	.	1
Knox College, Galesburg, Ill.	.	.	.	.	.	.	.	1		
Lafayette College, Easton, Pa.	.	.	.	.	.	.	.	.	.	1
Lake View, Ill., High School	.	.	.	.	1					
Lawrence Academy, Groton	.	.	.	.	1	1				
Lawrence High School	2	2	2	2	1	.	1	.	.	1
Lawrence Scientific School, Cambridge	.	.	.	.	.	1				
Lawrence University, Appleton, Wis.	.	.	.	.	.	.	1			
Leominster High School	.	.	.	.	.	.	1			
LeRoy, N. Y., Academy	.	.	.	.	.	.	1			
Lexington High School	.	.	.	1						
Lockport, N. Y., High School	.	.	.	1						
Lowell High School	1	1	2	1	1	3	1	2	1	2
Lynn High School	.	1	.	.	1	1	.	1	2	3
Madison, N. J., Classical Institute	1									
Malden High School	1	2	1	1	.	1	3			
Manchester, N. H., High School	.	.	1							
Marietta College, Ohio	.	.	.	.	.	1				
Markham Academy, Milwaukee, Wis.	1	.	.	.	.	.	.	.	1	
Marlboro' High School	.	.	1	.	.	.	.	.	2	1
Maupin's University School, Ellicott City, Md.	.	.	.	.	.	.	.	1		
Medford High School	1	.	1	.	1	.	.	.	1	
Melrose High School	.	.	.	2	.	1	1			
Milford High School	.	.	.	.	.	.	1	2	.	2
Milwaukee, Wis., High School	.	.	.	.	1	1	.	.	.	2
Missouri State University, Columbia, Mo.	.	.	1							
Montclair, N. J., High School	.	.	.	1	.	.	.	.	1	
Montpelier, Vt., High School	.	.	.	.	.	1				
Morse, J. H., Private School, New York	1	.	1	2	.	.	.	2		
Mt. Allison College, Sackville, N. B.	.	.	.	.	.	.	.	.	.	1
Mt. Pleasant Military Academy, Sing Sing, N. Y.	.	.	.	.	.	.	.	1		
Natick High School	.	.	.	.	.	1				
Needham High School	.	.	.	.	.	1				
New Bedford High School	.	1	.	.	1					
New Church School, Waltham	.	.	2	.	.	.	.	.	1	

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
New Haven, Conn., Hopkins Grammar School . .	.	1	1							
Newport, R. I., Rogers High School	.	2	2	.	.	2	2	.	1	2
Newton High School	5	7	6	3	9	5	4	5	4	2
Newton, N. J., Collegiate Institute	.	.	.	.	.	.	.	.	1	
New York School of Languages	.	.	.	.	.	.	1	1		3
Nichols Academy, Dudley	.	.	.	.	.	.	.	1		
Nichols, Wm., Private School, Boston	.	.	.	1	1	.	1	4	2	10
Noble, G. W. C., Private School, Boston	10	9	7	9	15	6	10	9	13	10
Northampton High School	.	.	1	.	.	1	1			
Oberlin College, Ohio	.	.	.	.	1	.	.	.	1	
Ohio Agricult. and Mechan. College, Columbus, O.	.	1								
Ohio Wesleyan University, Delaware, Ohio . . .	1	.	.	.	.	.	.	.	.	1
Omaha, Neb., High School	.	.	.	.	.	.	.	1		
Peekskill, N. Y., Military Academy	.	.	.	.	.	.	.	2		
Pennsylvania College, Gettysburg, Pa.	.	.	.	.	.	.	.	1	.	1
Phillips Academy, Andover	5	8	4	4	4	3	5	11	8	8
Phillips Academy, Exeter, N. H.	34	18	20	24	25	19	23	25	25	29
Pierce Christian College, College City, Cal. . . .	.	.	.	.	.	.	.	.	1	
Pittsburg, Pa., Central High School	.	.	.	.	.	.	.	.	.	1
Portland, Me., High School	.	.	.	1	.	.	5	.	2	1
Proctor Academy, Andover, N. H.	.	.	.	.	.	.	.	.	1	
Pro-Gymnasium, Germany	.	.	.	.	.	.	1			
Providence, R. I., High School	.	.	.	.	.	1	.	1		
Riverview Academy, Poughkeepsie, N. Y.	.	.	.	.	.	.	.	.	1	1
Rix's Collegiate School, Cincinnati, Ohio	.	.	.	.	2					
Roxbury Latin School	6	8	10	14	8	14	11	7	12	15
Rugby Academy, Philadelphia, Pa.	.	.	.	1	.	.	.	.	1	
Sachs' Collegiate Institute, New York	.	.	.	2	2	.	.	1	4	1
St. Johnsbury, Vt., Academy	.	.	.	.	.	.	1			
St. John's College, Fordham, N. Y.	.	.	.	.	.	.	.	1		
St. John's School, Sing Sing, N. Y.	1	1	.	.	.	1	.	.	.	2
St. Lawrence University, Canton, N. Y.	.	1	.	.	2					
St. Mark's School, Southboro'	2	8	1	2	1	3	5	4	1	1
St. Paul's School, Concord, N. H.	3	2	5	3	6	4	5	9	7	2
St. Stephen's College, Annandale, N. Y.	.	.	.	.	.	1				
Salem High School	2	4	2	6	4	2	2	3	5	3
San Francisco, Cal., Boys' High School	.	4	.	2	2	2	.	2	2	1
School of the Lackawanna, Scranton, Pa.	.	.	.	.	.	.	.	1		
Shortlidge's Media Academy, Pa.	.	.	.	.	.	1	.	2	2	
Skaneateles, N. Y., Union School	.	.	.	.	.	.	.	1		
Smith Academy, St. Louis, Mo.	.	.	.	.	.	.	1	.	.	1
Somerville High School	3	7	3	6	2	3	3	6	2	3
South Berkshire Institute, New Marlboro'	.	.	.	.	1					
Southwestern Presb. University, Clarksville, Tenn.	.	.	.	.	.	.	.	.	.	1
Springfield Collegiate Institute	.	.	.	1						
Springfield High School	.	2								
Spring Hill College, near Mobile, Ala.	.	.	.	.	.	.	.	.	1	
State College of Kentucky, Lexington, Ky.	.	.	.	.	.	.	1			
State University of Iowa, Iowa City	.	.	.	.	.	1	1			
Stewart Academy, Reading, Pa.	.	.	.	.	.	.	.	1		
Swarthmore College, Pa.	1	1	.	.	1	1	1			
Syracuse, N. Y., High School	.	1								
Syracuse University, N. Y.	.	.	.	.	.	.	.	.	1	
Tabor Academy, Marion	.	.	.	.	.	.	.	.	1	
Tabor College, Iowa	.	.	1							
Taunton High School	.	.	4	1	.	.	2	2	2	
Thayer Academy, South Braintree	.	.	.	.	.	.	.	4	1	
Trinity College, Hartford, Conn.	.	.	.	3	.	.	2	.	1	

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Troy, N. Y., High School	.	.	.	.	.	.	.	.	.	1
Tufts College, College Hill	.	.	.	.	.	.	1			
Université de France	.	.	.	.	.	.	1			
University of California, Berkeley, Cal.	.	.	.	.	.	.	1			
University of Cincinnati, Ohio	.	.	.	.	.	.	.	.	1	
University of Des Moines, Iowa	.	.	.	.	.	.	.	1		
University of Illinois, Champaign, Ill.	.	.	.	.	.	.	.	.	.	1
University of Kansas, Lawrence, Kas.	.	1								
University of Michigan, Ann Arbor, Mich.	.	.	.	.	.	.	.	.	.	3
University of Pennsylvania, Philadelphia, Pa.	.	.	.	1	1	1	.	.	1	1
University of Rochester, N. Y.	.	.	.	.	.	.	.	1	2	
University of Tennessee, Knoxville, Tenn.	.	.	.	.	.	.	.	1		
University of the City of New York	.	.	.	.	.	.	.	1		
University of Wisconsin, Madison, Wis.	.	.	.	1	.	.	.	.	1	
University School, Chicago, Ill.	.	.	.	.	.	.	.	.	2	2
University School, Petersburg, Va.	.	.	.	.	.	.	.	.	.	1
University School, San Francisco, Cal.	.	.	.	1	.	2				
Urban School, San Francisco, Cal.	1	.	.	1	.	.	8	.	1	
Utica, N. Y., Academy	.	1	.	.	.	1	.	.	1	1
Vermont Academy, Saxton's River, Vt.	.	.	.	.	1	.	.	.	.	1
Vermont Episcopal Institute, Burlington, Vt.	.	.	.	.	.	.	1	.	1	1
Waltham High School	.	1	.	.	.	1				
Warsaw, N. Y., Union School	.	.	1	.	.	.	.	2		
Washington University, St. Louis, Mo.	2	.	2	.	.	1				
Watertown High School	1									
Wesleyan University, Middletown, Conn.	.	.	.	.	.	3	.	.	1	
Westbrook, Me., Seminary	.	.	2							
Western Reserve University, Cleveland, Ohio	.	.	.	.	.	.	1			
Westfield High School	.	.	.	.	.	.	1			
West Newton English and Classical School	.	2	2	1	1					
West Virginia University, Morgantown, W. Va.	.	.	.	.	1					
White & Sykes, Walnut Hills Sch., Cincinnati, O.	.	.	.	.	.	.	1	.	4	
Wilkes Barre, Penn., Academy	.	.	.	.	.	.	1	.	2	
William Penn Charter School, Philadelphia, Pa.	.	.	.	.	1					
Williams College, Williamstown	.	.	.	1	.	.	.	.	.	1
Williston Seminary, East Hampton	4	1	2	1	1	8				
Wilson and Kellogg, Private School, New York	.	.	2	.	.	1	1	8	1	2
Wiscasset, Me., High School	.	1								
Wm. Jewell College, Liberty, Mo.	.	.	.	.	.	.	.	.	1	
Woburn High School	1	.	.	1	2	.	1			
Woonsocket, R. I., High School	.	.	.	.	.	1				
Worcester Academy	.	.	.	.	.	1	.	.	.	2
Worcester High School	.	8	3	6	2	1	3	1	1	2
Yale College, New Haven, Conn.	.	.	1	2	.	2	.	.	.	1
Private Pupils	49	46	28	38	42	48	53	36	38	30

VIII.

8 Bond Street, New York, June 22, 1885.

To the President and Fellows of Harvard College, Cambridge.

Gentlemen, —

Having been given the power of attorney, and intrusted by Professor Tyndall with the duty of delivering into your possession a sum of money for the foundation of a permanent scholarship, I herewith send you a check for the amount, together with a document which gives effect to this transaction. I have also thought it proper to make a brief statement concerning the origin of this fund, and how it has come to take its present form, premising that a complete history of the matter is contained in the volumes deposited for permanent reference in the library of Columbia College.

At the solicitation of numerous friends and many scientific men, Professor Tyndall came to this country in the year 1872 to deliver a course of scientific lectures in several of its chief cities. Disclaiming all purpose of making profit out of the undertaking, he came because of the assurances given that such lectures from him would be of great public value. The subject chosen was physical optics, and the great lesson which he sought to inculcate, as may be seen by referring to the volume in which the lectures were published, was the value and importance of pure science, and the great results that have come from its theoretic study as the research after principles and laws, and with no reference to its utilitarian applications.

When he had finished his work he had a surplus on hand of about $13,000 above expenses, and the question arose how the money was to be used. As it had been contributed by the American people he resolved that he would take none of it away, and that it should be devoted to the interests of science in this country. After consultation and correspondence he decided to leave the amount in the shape of a trust fund in the hands of three (3) trustees, and that the income from it should be devoted to the assistance of young men who desired to go abroad and pursue scientific study in the European universities. In his letter of instruction he said: "I desire to devote this sum of thirteen thousand and thirty-three dollars ($13,033) to the advancement of theoretic science and the promotion of original research in the department of Physics in the United States." Eligibility to the benefits of the trust was defined by Professor Tyndall by limiting it to "two (2) pupils who may have evinced decided talents in Physics, and who may express a determination to devote their lives to that work." Professor Joseph Henry of Washington, General Hector Tyndale of Philadelphia, and Mr. E. L. Youmans of New York, were appointed as trustees, and it was provided that on the death of any one of them substitutes should be chosen by the president of the National Academy of Sciences. When Professor Henry and General Tyndale died, President Barnard of Columbia College and Professor Lovering of Harvard University were appointed by President William B. Rogers of the National Academy of Sciences to fill their places.

The carrying out of this generous plan the trustees found to be not altogether free from difficulties. The income was at first insufficient to support two students abroad, and it was early resolved by the trustees to postpone appropriations for a time until the accumulated principal would furnish sufficient means: and when the money became available it was found not so easy as had been expected to secure students with the requisite qualifications. Although applicants were numerous, most of them failed to fulfil the required conditions. Some good appointments were made with satisfactory results, but the number of students evincing talent for original scientific work, and desiring to devote their lives to it, who sought assistance to go abroad for the purposes of study, were so small that only a portion of the income was consumed. The investments made were fortunate, and as the fund rapidly increased it was at length apparent that some change should be made in the plan to secure more effectually the object Professor Tyndall had in view. This it was thought could be best done by putting the money in charge of prominent and responsible educational institutions, which recognize the advance of science as among the objects to be guarded and promoted. The trustees having consulted with Professor Tyndall upon this matter, he proposed that the fund should be divided into three (3) equal parts, constituting the foundation of three (3) scholarships in Physical Science in three (3) American institutions — the University of Pennsylvania, Harvard University, and Columbia College, New York. The trustees accordingly transferred the fund, amounting to thirty-two thousand four hundred dollars ($32,400), back to the possession of the original donor to be distributed by him among such colleges as he might designate.

I have thought it desirable to make the foregoing statement that you may understand the circumstances under which the fund comes into your possession. Professor Tyndall has not been strict or formal in his requisition upon the College authorities as to the use they shall make of the donations. But the purpose he has had in mind has been plain from the outset and will be a sufficient guide to you in the expenditure of the money. The noble purpose of the endowments, the magnitude of the gifts, the generous self-sacrifice of the donor, who freely contributed his time and labor in preparing and delivering the lectures, and the fact that the money was eagerly given by the American people to listen to one of the most elevated and instructive series of lectures ever delivered in this country; all these circumstances seem to require that these scholarships should be of a high class, that they should favor and encourage original scientific work, and be so administered as to be an honor alike to the beneficiaries, to the institutions who accept the trust, and to the illustrious founder to whose single-minded devotion to the interests of pure science this splendid benefaction is due.

With great respect, very truly yours,

WILLIAM W. APPLETON.

TO ALL TO WHOM THESE PRESENTS SHALL COME: BE IT KNOWN: *that John Tyndall*, Professor of Natural Philosophy in the Royal Institution of Great Britain, D.C.L., L.L.D., F.R.S., F.G.S., F.C.S., having in the years 1872 and 1873 given a series of lectures in various cities of the United States, the net proceeds whereof he appropriated towards the education of young men in the United States who should evince decided talent in Physics, which appropriation has hitherto failed of its object and resulted only in the increase of the fund by judicious management from about $13,000 to $32,400, and the said John Tyndall still desiring to effect the purpose aforesaid, having determined to entrust the said fund in equal shares to *Harvard College*, *Cambridge*, to *Columbia College* in the *City of New York*, and to the *University of Pennsylvania*. Now the said *John Tyndall*, acting herein by *William W. Appleton* of the City of New York, his attorney in fact, does by these presents *give*, *grant*, and make over to the *President and Fellows* of *Harvard College* the sum of *Ten thousand eight hundred dollars* ($10,800) lawful money of the United States to hold to them and their successors forever: UPON TRUST to keep the same judiciously and safely invested, and to apply the whole net income thereof in supporting or assisting to support one or more American pupils who may have shown decided talents in Physics, and preferably such as shall express the determination to devote their lives to the advancement of theoretic Science and original investigation in that department of learning.

Each person so assisted shall be either a graduate or a student in some department of Harvard University, but not necessarily a candidate for a degree.

His studies and researches may be conducted at such places in America or at such European universities as may be considered most desirable and shall be approved by the Academic Council of Harvard University.

Such assistance may be continued to the same student from year to year so long as may be recommended by the Academic Council, but the appointment must be renewed annually and only upon satisfactory evidence that the incumbent is fulfilling the purpose of the endowment. The student should be required from time to time to furnish evidence of his fidelity, proficiency, and good character.

If in the course of any year no student of sufficient ability and promise shall require aid from said fund or for any reason the whole income of said fund shall not be expended the surplus may either be added to the principal or may be expended in addition to the income of a subsequent year or years.

The President and Fellows are authorized at their discretion to impose such conditions and make such requirements upon the recipient of aid from said fund as will best secure his faithful devotion to the purposes of this foundation.

If by any means it shall happen at any time or times that the specific purpose of this foundation cannot be carried into effect, its general purpose shall not thereby be defeated, but the available income shall be applied in some manner to the advancement of Science.

The Scholarship hereby founded may be designated as the *John Tyndall Scholarship*.

IN WITNESS WHEREOF the said *John Tyndall* by his attorney aforesaid hath hereunto set his hand and seal this twentieth day of June one thousand eight hundred and eighty-five.

And the said the *President* and *Fellows* of *Harvard College* accept the said trust and in token thereof have affixed their corporate seal to these presents.

JOHN TYNDALL, [Seal.]
By WILLIAM W. APPLETON, his attorney in fact.

PRESIDENT AND FELLOWS OF HARVARD COLLEGE,
By CHARLES W. ELIOT, President. [Seal.]

STATE OF NEW YORK,
CITY AND COUNTY OF NEW YORK, } ss.

On this 22d day of June, 1885, before me personally came *William W. Appleton*, to me known, and known to me to be the attorney of John Tyndall the individual described in and who by his said attorney executed the foregoing instrument, and he acknowledged that he executed the same as the act and deed of John Tyndall therein described and for the purposes therein mentioned by virtue of a power of attorney duly executed by the said John Tyndall bearing date the 27th day of March, 1885.

GEORGE H. LOVE,
Notary Public, Kings Co.

Cert. filed in New York Co., N. Y.

IX.

SUMMARY OF STUDENTS IN THE UNIVERSITY AT THE BEGINNING OF THE ACADEMIC YEAR 1884–85.

College		
Seniors	191	
Juniors	234	
Sophomores	256	
Freshmen	255	
Special Students	70	
		1006
Divinity School		26
Law School		153
Lawrence Scientific School		28
Medical School		249
Dental School		35
Bussey Institution		6
School of Veterinary Medicine		21
Candidates for Higher Degrees		49
Holders of Fellowships		9
Resident Graduates not Candidates for a Degree		12
Whole number of students		1594
Deduct for names inserted more than once		8
		1586

Persons who attended the Summer Courses in Science in 1885.

Chemistry	25

Number of Certificates issued to Women in 1885.

Final Examination	1

X.

ACADEMIC HONORS FOR THE YEAR 1884–85.

Commencement, June 24, 1885.

Orations.

Arthur Gordon Webster,
William Christopher Smith,
Charles Mather Harrington,
Bancroft Gherardi Davis,
Lawrence Litchfield,
George Arthur Cragin,
William Francis Bacon,
Abner Ernest Strong,
Henry Theodore Hildreth,
Hugh Henry Brogan,
Daniel William Lothman,
Victor Clifton Alderson,
Charles Wesley Birtwell,
Charles Augustus Strong.

Dissertations.

Charles Bertie Gleason,
Joseph Mansfield Long,
Horace David Arnold,
George Fauntleroy Davidson,
Charles Frederic Carrier,
Allen Howard Chamberlain,
Theodore Dunham,
Edward Irving Smith,

Richard Aldrich,
Otto Rheinhard Hansen,
Edward Blake Young,
Daniel Kelleher,
George Fairbanks Partridge,
Edward Tyler Edgerley,
Joseph Adna Hill,
George Read Nutter,
Samuel Lynde Foster,
Loring Woart Batten,
Roland William Boyden,
Leonard Brown Clark,
John McGregor Goodale,
Charles Carroll King,
John Joslin Colony,
Ernest Lawrence Thayer,
Robert Stetson Gorham,
William Belden Noble,
Clarence Walter Ayer,
Charles Alexander Whittemore,
Chauncey Goodrich Parker,
Theophilus Huntington Root,
John Francis Mahoney,
Edward Dudley Marsh,
John Francis Holland,
Reuben Peterson,
Paul Shipman Drake,
George Sidney Tylor,
Louis Lincoln Jackson,
Charles Albert Peterson,
John Hays Gardiner,
William Morrow McInnes,
Palmer Ellis Presbrey,
John R. McArthur,
Frank Louis Van Cleef,
John Sanburn Phillips,
Edward Terry Sanford,
James Reed Yocom.

Disquisitions.

George William Rolfe,
Charles Austin Sawin,
George Richard Blinn,
William Leverett,
Hiram Warren Wadsworth,
Henry Foster Lewis,
Andrew Henshaw Ward,
Frederic Ives Carpenter,
Arthur Keith,
Eliot Norton,
Marland Coggswell Hobbs,
William Warren Winslow,
Samuel Smart Watson,
Walter Allen Halbert,
John Breed Newhall,
Walter Dewees Roberts,
Stephen Smith Bartlett,
Robert Sloan Bickford,
Francis Winthrop White,
Martin Luther Bradford,
Edward Kirk Keep,
Frederic Eugene Puffer,
Nathan Emery Coffin,
Stephen Arnold Bailey,
Walter Folger Greenman,
Cyrus Wendell Irish,
Edward Isaac Kimbal Noyes,
Edward Franklin Woods,
Edson Leone Whitney,
William Wharton Smith,
James Kirke Paulding,
Robert Fields Simes,
Frederic Adrian Delano,
John Simpkins,
Ezra Palmer Mills,
Albion Otis Wetherbee,
Frank Josiah Bowman,
Alfred William Hoyt,
Justin Perry Miner,
Arthur Patterson Chadbourne.

HONORS AT GRADUATION.

In Classics.

Henry Theodore Hildreth,	Highest Honors.
Charles Bertie Gleason,	Honors.
Daniel William Lothman,	Honors.
Abner Ernest Strong,	Honors.
Frank Louis Van Cleef, A.B. (*Oberlin College*),	Honors.

In English.

John Sanburn Phillips, A.B. (*Knox College*),	Honors.
William Christopher Smith,	Honors.
Herbert Eveleth Greene, A.B., 1881,	Honors.

In Philosophy.

Charles Augustus Strong, A.B. (*Univ. of Rochester*),	Highest Honors.

In Political Science.

Edward Terry Sanford, A.B. (*Univ. of Tennessee*),	Honors.

In History.

Charles Frederic Carrier,	Honors.
Charles Mather Harrington,	Honors.

In Music.

Clarence Walter Ayer,	Honors.

In Mathematics.

Arthur Gordon Webster,	Highest Honors.

In Physics.

Hugh Henry Brogan,	Honors.
Arthur Gordon Webster,	Honors.

In Natural History.

James Reed Yocom,	Honors.

SECOND-YEAR HONORS.

In Classics.

Juniors:

Everett Vergnies Abbot,	Honors.
Charles Ruel Fletcher,	Honors.

Sophomores:

Homer Worthington Brainard,	Highest Honors.
Wilton Lincoln Currier,	Honors.
Charles Allerton Cushman,	Honors.
Ellis Loring Dresel,	Honors.
Albertus True Dudley,	Honors.
Myron Augustus Lochman,	Honors.
Edward Irving Manley,	Honors.
Frank Chester Southworth,	Honors.
Walter Raymond Spalding,	Honors.
Stephen Berrien Stanton,	Honors.
Winthrop Tisdale Talbot,	Honors.

Freshman:

James Loeb,	Highest Honors.

Special Student:

Charles Sumner Balcombe,	Honors.

In Mathematics.

Juniors:	
William Fogg Osgood,	Highest Honors.
Binney Gunnison,	Highest Honors
Alfred Henry Lloyd,	Honors.
Frank Hamilton Underwood,	Honors.
Sophomores:	
Edgar Buckingham,	Honors.
Charles Sharpless Pastorius,	Honors.
Joseph Eugene Walker,	Honors.
Freshman:	
Maxime Bôcher,	Highest Honors.

HONORABLE MENTION AT GRADUATION.

Victor Clifton Alderson. *English Composition; Philosophy.*
Richard Aldrich. *English Composition; Political Economy.*
Horace David Arnold. *English Composition; Natural History.*
Clarence Walter Ayer. *Music.*
Stephen Arnold Bailey. *English Composition; German; French.*
Stephen Smith Bartlett. *English Composition; Philosophy.*
Loring Woart Batten. *English Composition; Philosophy.*
Charles Wesley Birtwell. *English Composition; Philosophy.*
George Richard Blinn. *English Composition; Philosophy; Natural History.*
Frank Josiah Bowman. *Philosophy.*
Hugh Henry Brogan. *English Composition; Mathematics; Physics.*
Frederic Ives Carpenter. *History.*
Charles Frederic Carrier. *History.*
Arthur Patterson Chadbourne. *Natural History.*
Leonard Brown Clark. *Natural History.*
Nathan Emery Coffin. *History.*
John Joslin Colony. *Political Economy; History.*
George Arthur Craigin. *English Composition; Natural History.*
George Fauntleroy Davidson. *Mathematics; Physics.*
Bancroft Gherardi Davis. *English Composition; History.*
Frederic Adrian Delano. *Natural History.*
Theodore Dunham. *Greek; Latin.*
Edward Tyler Edgerly. *German; Natural History.*
John Hays Gardiner. *Greek.*
Charles Bertie Gleason. *Greek; Latin; English Composition.*
John McGregor Goodale. *History.*
Robert Stetson Gorham. *Political Economy.*
Walter Folger Greenman. *English Composition; Philosophy.*
Walter Allen Halbert. *English Composition; History.*
Otto Rheinhard Hansen. *Political Economy; History.*
Charles Mather Harrington. *English Composition; Political Economy; History.*
Henry Theodore Hildreth. *Greek; Latin; English Composition.*
Joseph Adna Hill. *Greek; English Composition.*
Marland Cogswell Hobbs. *Greek; English Composition.*
John Francis Holland. *Political Economy; History.*

Alfred William Hoyt. *Natural History.*

Cyrus Wendell Irish. *Chemistry.*

Louis Lincoln Jackson. *Chemistry; Natural History.*

Edward Kirk Keep. *English Composition.*

Arthur Keith. *Greek; Natural History.*

Maximillian Lindsay Kellner. *Semitic Languages.*

Charles Carroll King. *English; English Composition; Political Economy; History.*

William Leverett. *Greek.*

Henry Foster Lewis. *English Composition; Chemistry; Natural History.*

Lawrence Litchfield. *Natural History.*

Joseph Mansfield Long. *English Composition; Philosophy.*

Daniel William Lothman. *Greek; Latin; English Composition.*

John R McArthur. *English Composition; History.*

William Morrow McInnes. *Political Economy; History; Mathematics.*

John Francis Mahoney. *Natural History.*

Edward Dudley Marsh. *Greek.*

Ezra Palmer Mills. *History.*

Justin Perry Miner. *English Composition; German.*

John Breed Newhall. *Philosophy.*

William Belden Noble. *English; English Composition; Political Economy.*

Edward Isaac Kimbal Noyes. *Music.*

George Read Nutter. *Philosophy.*

George Fairbanks Partridge. *Philosophy.*

James Kirke Paulding. *History.*

Charles Albert Peterson. *Mathematics.*

Reuben Peterson. *Political Economy; Natural History.*

John Sanburn Phillips. *English; English Composition.*

Palmer Ellis Presbrey. *Political Economy.*

Frederic Eugene Puffer. *Natural History.*

Charles Prosser Robinson. *History.*

Edward Drake Roe. *Philosophy.*

George William Rolfe. *Chemistry.*

William Noble Roundy. *English.*

Edward Terry Sanford. *English Composition; Political Economy; History.*

Robert Fields Simes. *Political Economy.*

John Simpkins. *Natural History.*

Edward Irving Smith. *English Composition; Mathematics.*

William Christopher Smith. *Greek; English; English Composition; History.*

William Wharton Smith. *Natural History.*

James Jackson Storrow. *Natural History.*

Abner Ernest Strong. *Greek; Latin; English Composition; Mathematics.*

Charles Augustus Strong. *Philosophy.*

Ernest Lawrence Thayer. *English Composition; Philosophy.*

William Sydney Thayer. *Greek.*

George Sidney Tylor. *English.*

Frank Louis Van Cleef. *Greek.*

Andrew Henshaw Ward. *Greek.*

Samuel Smart Watson. *English Composition; Political Economy; History.*

Arthur Gordon Webster. *English Composition; Mathematics; Physics.*

Albion Otis Wetherbee. *Greek.*
Francis Winthrop White. *Natural History.*
Edson Leone Whitney. *History.*
Charles Alexander Whittemore. *Political Economy.*
William Warren Winslow. *English Composition; Philosophy.*
Edward Franklin Woods. *German.*
James Reed Yocom. *Natural History.*
Edward Blake Young. *Political Economy; History.*

XI.

PRIZES.

DETURS.

The following students received books, called "Deturs," from the foundation of Edward Hopkins, for excellence in scholarship: —

Freshmen of 1883–84.

Franklin Elmer Ellsworth Hamilton,
Charles Sproull Thompson,
John Henry Gray.

Freshmen of 1884–85.

Ezra Ripley Thayer,
William Augustine Leahy,
Maxime Bôcher,
Rowland Blennerhassett Mahany,
Frank Beverly Williams,
Fred Bates Lund,
Russell Duane,
John William Henry Walden,
Edward Avery Harriman,
Philip Melancthon Hammett,
Frederick Howard Means,
William Pride Henderson,
Carroll Everett Edson,
Clarence Willard Gleason,
Richard Clarke Manning, Jr.,
James Loeb,
Charles Haven Goodwin,
Marshall Bidwell Clarke,
William Goodrich Thompson,
James Alderson Bailey,
Arthur Lincoln Howard,
Ernest Bernard Chenoweth,
Wendell Phillips Elkins,
Howard Beers Gibson,
Robert Higginson Fuller,
Herman Page,
Samuel Foster McCleary, Jr.,
Henry Allston Pulsford.

BOWDOIN PRIZES.

II.

William Christopher Smith, Senior.
Sumner Dow Richardson, Junior.
Thomas Parker Sanborn, Junior.

III. *a.*

William Morton Fullerton, Junior.

III. *b.*

Henry Theodore Hildreth, Senior.

BOYLSTON PRIZES FOR ELOCUTION.

First Prizes.

William Henry Baldwin, of the Class of 1885.
Odin Barnes Roberts, of the Class of 1886.

Second Prizes.

William Morton Fullerton, of the Class of 1886.
James Henry Paine, of the Class of 1886.
George Santayana, of the Class of 1886.

XII.

DEGREES.

Bachelors of Arts of the Class of 1885	181
Bachelors of Arts of former Class	4
Bachelors of Divinity	6
Bachelors of Law	18
Bachelor of Law (out of course)	1
Doctors of Medicine	62
Doctors of Dental Medicine	8
Bachelor of Science (out of course)	1
Bachelor of Agricultural Science	1
Civil Engineers	4
Doctors of Philosophy	4
Masters of Arts	12

HONORARY DEGREES.

Doctors of Laws.

Alexander Agassiz,
James Coolidge Carter,
Benjamin Apthorp Gould,
James Eliot Cabot,
Morrill Wyman.

Master of Arts.

Henry Fitzgilbert Waters.

XIII.

COMMITTEES OF THE OVERSEERS FOR 1885.

To visit the University.

The President of the Board of Overseers.
His Excellency the Governor.
His Honor the Lieutenant-Governor.
The President of the Senate.
The Speaker of the House of Representatives.
The Secretary of the Board of Education.
The Secretary of the Board of Overseers.
The Chairman of each of the Visiting Committees.

To visit the College. — On Government.

Moorfield Storey,
Andrew P. Peabody,
E. E. Hale,
Leverett Saltonstall,
Alexander Agassiz,
Morrill Wyman,
Richard M. Hodges,
John T. Morse, Jr.,
Edwin P. Seaver,
Theodore Lyman,
Charles R. Codman,
Alexander McKenzie,
Le Baron Russell,
John Noble,
John D. Washburn.

To visit the College. — On Languages.

Theodore Lyman,
Robert D. Smith,
William J. Rolfe,
Robert E. Babson,
Carl Wolff,
Francis A. Waterhouse,
John Holmes,
Henry W. Haynes,
Joaquin M. Torrijo,
Robert Shaw Sturgis,
Thomas Cushing,
Horatio G. Curtis,
Francis Peabody, Jr.,
William T. Harris,
William Everett,
Russell Gray,
Henry F. Sears.

To visit the College. — On Rhetoric and English Literature.

Charles R. Codman,
John T. Morse, Jr.,
Roger Wolcott,
George B. Chase,
Henry W. Foote,
Josiah Quincy, Jr.,
William Warren,
Brooks Adams.

To visit the College. — On History and Political Science.

John T. Morse, Jr.,
Henry C. Lodge,
Solomon Lincoln,
Alexander McKenzie,
Brooks Adams,
Samuel F. McCleary,
William P. Atkinson,
Edward G. Porter,
Abbott Lawrence,
Samuel Eliot,
John D. Washburn.

To visit the College. — On Philosophy.

Andrew P. Peabody,
John Fiske,
Alexander McKenzie,
G. A. Gordon,
Joseph B. Warner,
J. Elliot Cabot,
Howard Stockton.

To visit the College. — On Mathematics, Physics, and Chemistry.

Edwin P. Seaver,
William Watson,
J. D. Runkle,
E. D. Leavitt, Jr.,
Oliver F. Wadsworth,
Robert Amory,
Daniel B. Hagar,
George V. Leverett,
Channing Whitaker,
Francis Blake, Jr.,
Walter C. Cabot,
George R. Briggs.

To visit the College. — On Natural History.

Morrill Wyman,
Theodore Lyman,
Alexander Agassiz,
R. Pumpelly,
Alpheus Packard, Jr.,
William H. Niles.

To visit the College. — On Fine Arts and Music.

Leverett Saltonstall,
John O. Sargent,
S. L. Thorndike,
William F. Apthorp,
Charles A. Cummings,
W. P. P. Longfellow,
John S. Dwight,
Charles G. Loring,
Arthur Rotch,
Frederick Crowninshield,
Stanton Blake.

To visit the Divinity School.

E. E. Hale,
Phillips Brooks,
Andrew P. Peabody,
James F. Clarke,
Edward H. Hall,
Lysander Dickerman,
Francis B. Hornbrooke,
Franklin Johnson,
Henry W. Foote,
Thomas Hill,
F. W. Holland,
Alexander McKenzie,
Artemas B. Muzzey,
Waldo Higginson,
Charles F. Dole,
Arthur Brooks,
Brooke Herford,
Endicott Peabody.

To visit the Law School.

William G. Russell,
Robert D. Smith,
Solomon Lincoln,
John Lowell,
Francis E. Parker,
Robert M. Morse, Jr.,
Leverett Saltonstall,
George O. Shattuck,
Roger Wolcott,
Darwin E. Ware,
Charles C. Beaman, Jr.,
Francis V. Balch,
Richard Olney,
Oliver W. Holmes, Jr.

To visit the Scientific School, the Bussey Institution, the Peabody Museum of American Archaeology and Ethnology, and the Museum of Comparative Zoölogy.

Morrill Wyman,
R. M. Hodges,
John O. Sargent,
Francis M. Weld,
Theodore Lyman,
Henry P. Kidder,
Charlemagne Tower,
Alphonse Fteley,
Ernest W. Bowditch,
Thomas C. Clark,
Abbott Lawrence,
Channing Whitaker,
T. J. Coolidge,
Clemens Herschel.

To visit the Medical, Dental, and Veterinary Schools.

Francis M. Weld,
Richard M. Hodges,
Samuel A. Green,
Morrill Wyman,
John C. Dalton,
Hall Curtis,
Le Baron Russell,
Alfred Hosmer,
George C. Shattuck,
Samuel L. Abbott,
Algernon Coolidge,
W. W. Wellington,
Frederic Winsor,
John A. Gordon.

To visit the Observatory.

Alexander Agassiz,
Charles R. Codman,
Theodore Lyman,
Henry C. Lodge,
Benjamin A. Gould,
George I. Alden,
Robert C. Winthrop,
Alvan Clark,
Augustus Lowell,
Simon Newcomb,
John C. Palfrey,
Robert T. Paine,
T. J. Coolidge,
Charles F. Choate,
Frederick O. Prince,
F. H. Peabody.

To visit the Library.

Phillips Brooks,
John Fiske,
Samuel A. Green,
John O. Sargent,
Charles F. Adams, Jr.,
John T. Morse, Jr.,
Charles A. Cutter,
Charles Deane,
Charles C. Smith,
Stephen Salisbury,
Mellen Chamberlain,
Samuel S. Green,
John M. Brown,
William W. Greenough,
George W. Wales,
Henry G. Denny,
Henry F. Jenks,
Robert Grant,
G. E. Littlefield.

To visit the Botanic Garden and Herbarium.

Henry Lee,
Alexander Agassiz,
William Boott,
William Gray, Jr.,
H. H. Hunnewell,
Francis A. Osborne,
Henry P. Walcott,
Thomas Meehan,
Frederick L. Ames,
John Cummings,
Augustus Lowell,
J. Warren Merrill,
J. Pierpont Morgan,
Benjamin F. Cheney.

On Treasurer's Accounts.

Henry P. Kidder,
George O. Shattuck,
Roger Wolcott,
Charles H. Parker,
George B. Chase,
Israel M. Spelman.

On Elections.

Charles R. Codman,
John Lowell,
Leverett Saltonstall,
Moorfield Storey,
William G. Russell.

On Reports and Resolutions.

Robert D. Smith,
Solomon Lincoln,
Francis E. Parker,
Charles Francis Adams, Jr.,
Robert M. Morse, Jr.,
Henry Lee,
Charlemagne Tower.

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TREASURER'S STATEMENT.

1885.

TREASURER'S STATEMENT.

To the Board of Overseers of Harvard College:—

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending August 31, 1885, in the usual form.

The Funds separately invested, with the income thereof, are as follows: —

	Principal. Aug. 31, 1885.	Income.
UNIVERSITY.		
George B. Dorr Fund (part of),		
187 shares Pennsylvania Coal Co.,	$25,525.50	1,496.00
COLLEGE.		
Stoughton Scholarship (part of),		
Real Estate in Dorchester,	1,294.30	none
Pennoyer Scholarships (part of),		
Pennoyer Annuity in England,	4,444.44	277.50
Rumford Professorship (part of),		
French Rentes,	10,000.00	579.96
Jonathan Phillips Gift,		
Mortgage,	10,000.00	500.00
Daniel H. Peirce Fund,		
Mortgage,	12,959.36	644.74
Samuel Ward's Gift,		
Ward's (Bumkin) Island, Boston Harbor,	1,200.00	50.00
Scholarships of the **Class of 1856**,		
$10,000 Frem., Elkhorn & Mo. Valley R.R. 6% Bds.,	10,000.00	300.00
Physical Laboratory Endowment (part of),		
Personal note (endorsed),	15,000.00	625.00
LIBRARY.		
Charles Minot Fund (part of),		
$60,000, Buffalo, Bradford, & Pittsb. R. R. Bonds,	60,000.00	4,200.00
Ichabod Tucker Fund (part of),		
Policy of Mass. Hospital Life Insurance Co.,	5,000.00	200.00
Daniel Treadwell Fund (part of),		
15 shares Boston & Albany R. R. Co.,	2,711.25	
6 " Boston & Providence R. R. Co.,	1,096.50	
9 " Fitchburg R. R. Co.,	1,049.00	
2 " Ports., Gt. Falls & Con. R. R. Co.,	79.50	
18 " Cambridge Lyceum,	540.00	
Amounts carried forward,	**$160,899.85**	**$8,873.20**

Amounts brought forward,	$160,899.85	$8,873.20

SCIENTIFIC SCHOOL.

John B. Barringer Fund (part of),		
40 shares Schenectady Bank Stock, ...	2,200.00	200.00

MEDICAL SCHOOL.

Edward M. Barringer Fund (part of),		
10 shares Schenectady Bank Stock, ...	600.00	50.00

MUSEUM OF COMPARATIVE ZOÖLOGY.

Agassiz Memorial Fund (part of),		
Personal notes (endorsed), ...	27,487.01	1,849.70

OBSERVATORY.

Anonymous gift (now used to pay annuity),		
$1,000, Michigan South'n & No. Indiana R. R. Bond (paid off during the year), ...		70.00
$2,000, Cincinnati Municipal Bonds, ...	2,000.00	140.00
$2,000 Minneapolis Municipal Bonds, ...	2,000.00	160.00
50 shares Pittsburg, Fort Wayne, & Chicago, R. R. Stock, ...	5,000.00	350.00

SPECIAL FUNDS.

Bussey Trust,		
Real Estate, ...	413,092.80	14,996.16
Robert Troup Paine Fund (accumulating),		
$25,500 Mass. 5% Bonds, ...	29,247.50	1,252.78
New Law School Professorship (part of),		
Personal note (paid during the year), ...		2,404.18
Henry Harris Fund (part of),		
Mortgages (partly assigned during the year), . .	3,000.00	785.00
	$645,527.16	$31,131.02

The other Funds of the College are invested as a whole. The general investments, with the income thereof, are as follows: —

Investments.	Principal, September 1, 1884.	Principal, August 31, 1885.	Income.
Notes, Mortgages, &c., ...	$558,230.11	$572,540.64	$27,285.41
Railroad Bonds and Premiums, . .	1,545,277.66	1,709,854.25	88,066.26
Railroad Stock, ...	110,811.08	115,985.33	8,823.00
New Boston Coal Mining Co. Bonds,	9,000.00	9,000.00	700.00
Bank Stock, ...	68,964.00	68,964.00	4,624.80
Manufacturing Stock, ...	103,658.29	103,658.29	4,912.00
Real Estate, ...	1,418,017.42	1,415,240.12	84,648.94
Unimproved Lands, ...	74,487.79	71,942.79	
Brattle Street Reversion, ...	1,000.00	1,000.00	
Advances to Scientific School, . . .	3,704.76	2,137.79	222.29
" " Dental School, ...	14,854.36	4,947.04	468.24
Amounts carried forward,	$3,908,005.47	$4,070,270.25	$219,750.94

Amounts brought forward,	$3,903,005.47	$4,070,270.25	$219,750.94
Advances to Bussey Trust, ...	40,266.13	40,266.13	2,013.30
“ “ Dining Hall Association,	33,232.16	31,732.16	1,993.93
“ “ Law School, ...		218.28	
“ “ Athletic Association, . .	1,000.00		91.64
“ “ Observatory, ...	876.07	1,178.56	52.56
“ “ School of Veterinary Medicine, ...	5,813.21	13,322.94	600.38
“ “ Law School Building Fund,	7,431.07		356.53
“ “ Bussey Institution, . . .	2,273.41		
Baring Brothers & Company, . . .	773.41	2,945.56	39.59
Term Bills due Oct., 1885, ...	84,041.23	90,324.64	
Term Bills overdue, ...	2,623.16	2,563.49	
Cash in Suffolk National Bank, .	13,961.49	18,227.23	
Cash in hands of Bursar, ...	5,807.94	5,816.29	
Totals of general investments,	4,101,104.75	4,276,865.53	224,898.87
Totals of special investments,	702,833.61	645,527.16	31,131.02
Amounts, . . .	$4,803,938.36	$4,922,392.69	$256,029.89

During the year a large investment has been made in the six per cent sterling bonds of the Eastern R. R. of Massachusetts, of which both the principal and interest are payable in gold. All the income received during the year from these bonds was used to repay advances for accrued interest on the same. The account of “railroad bond premiums” has been charged with $3880 for the premiums paid on $16,000 of seven per cent and ten per cent bonds bought, and it has been credited with $12,290 which was taken from the income of $806,000 of seven per cent bonds and $141,000 of ten per cent bonds, which were held during the whole year. This account has also been credited with $1590.24 for the difference between accrued interest repaid and that advanced during the year. The difference between a gain of $3582.50 upon $70,000 of Eastern R. R. dollar bonds, bought and sold during the year, and a loss of $1037.50 upon $19,000 of Marquette, Houghton, and Ontonagon R. R. bonds sold out during the year, has been used to reduce the book valuation of “unimproved lands.” All other changes in the investments of the University are sufficiently accounted for by the receipts and payments hereinafter stated in detail.

The net income of the general investments ($224,898.87) has been divided at the rate of $5\frac{43}{100}$ per cent among the Funds to which they belong, after allowing to the Physical

Laboratory Building Fund a special rate of four per cent on its balance during the period of construction. The balance of $82.73 has been placed to the credit of the University account.

The rate of income compared with that for 1883–84 shows a gain of $\frac{26}{100}$ of one per cent, which is only a partial recovery from an exceptional loss of $\frac{40}{100}$ of one per cent for the year before. The rate of income still tends slowly downwards, as new investments cannot now be made to yield as much as the average return from the old property. Changes of investment, and the fluctuating demands for outlay upon the productive real estate, occasion temporary variations in the rate of income which are not significant.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments: —

Interest on funds for		
University Salaries and Expenses,	$29,039.40	
College Expenses,	3,069.04	
Library,	6,735.67	
College Salaries,	29,331.00	
Gymnasium, and repairs on College buildings,	none.	
College Term bills,	185,715.10	
Sundry cash receipts,	14,370.55	
		268,260.76
Expended for		
University Salaries and Expenses,	$34,544.08	
College Expenses,	41,398.20	
Library Salaries and Expenses (not books),	23,192.56	
College Salaries,	152,175.56	
Gymnasium Expenses,	8,947.79	
Repairs and insurance on College Buildings not valued on Treasurer's books,	6,049.14	
		266,307.33
Balance, which has been carried to Stock Account, to repay in part former deficits,		$1,953.43

A considerable increase in the expenditure for College salaries has been provided for mainly by the increase in the number of students. The other expenses for the University, College, and Library have been as a whole somewhat less than for the previous year, during which the back income received with the Eben Wright Fund permitted unusual outlays. The surplus of $1953.43, which has been credited to the "Stock Account," is only nominal, as it should all have been spent on repairs of the College buildings, which ought not to be postponed. For 1883–84 there was a deficit for the University, College, and Library of $271.17.

The Divinity School has a surplus for the year of $760.05, due to a larger income both from students and from investments, and a much smaller expenditure for repairs and improvements than during the previous year, and in spite of less income from the Bussey Trust. For 1883–84 there was a deficit of $1352.22.

The Law School has closed its account for the building and furnishing of Austin Hall, and for the improvement of its grounds, having received during the year additional gifts amounting to $5500 from Edward Austin, Esq., for the painting of the interior and for the removal of the Holmes house, and having spent in all from the beginning of construction $9734.25 in addition to Mr. Austin's gifts and the interest earned thereon. The account has been closed by using the Law School's old balance of $6339.03, its surplus for the current year of $3176.94, and the sum of $218.28, which has been advanced by the "general investments," to be repaid out of next year's income. The Law School is now, owing to Mr. Austin's generosity and that of its other friends, in a good position financially, with its fine building finished and nearly furnished, and with a fair surplus of current income for additions to its means of instruction. The surplus of $3176.94 for the current year has been due to an increase in the number of students and to a decrease of general expenses other than salaries. The amount of this decrease has been exceptional; but on the other hand it is to be hoped that the Law School's share of income from the Bussey Trust will not again be so small as it has been this year. For the year 1883–84 the Law School had a deficit of $412.86.

The Medical School has a surplus for the year of $2039.10, a considerable increase in the expenditure for salaries having been more than offset by a large reduction of many other expenses, which were exceptionally heavy when the new building was first used, and by an increase of income from students and from investments. The deficit of $17,934.63 for 1883–84 was wholly due to the cost of finishing and furnishing the new building.

For the Dental School there is a surplus of $507.32, due to larger receipts from students and from the Infirmary, and to smaller expenditure for repairs and improvements. For 1883–84 the large outlay for repairs and improvements, which caused a deficit of $1195, was made necessary by the removal of the School from Allen Street. The house in Allen Street has been sold during the year for $9400, and its proceeds with the surplus for the year have been used to reduce the debt of the School.

For the Lawrence Scientific School larger receipts and smaller expenses have left a surplus of $1566.97, which has been used to reduce the debt of the School. For 1883–84 there was a surplus of $350.54.

The Museum of Comparative Zoölogy has spent all the income of its restricted funds, and has used the surplus income of the Agassiz Memorial Fund, amounting to $6587.17, to repay in part the notes given by Mr. Agassiz to the Memorial Fund for advances on account of the extension of the Museum building.

The Observatory, in spite of reduced expenses and inincreased income, has had a deficit of $302.49, which has increased its debt to the "general investments." For 1883–84 the deficit was $3948.59, the greater part of which was provided for by old subscriptions which had been paid in advance.

The Bussey Institution has increased its receipts from the farm and from students, and largely reduced its expenses. In spite of a smaller income from the Bussey Trust, there is a surplus for the year of $553.23. For 1883–84 there was a deficit of $2323.91. The debt of the Institution to the "general investments" has been paid off from the Bussey Building Fund.

The Veterinary School has largely increased both its receipts and expenditure. On its current account there is a deficit for the year of $410.51, which, with the sum of $7099.22 spent during the year on its new building, has increased its debt by $7509.73. The payments to the School for services rendered at its Hospital have been made more promptly than they were last year.

The net income from the Bussey stores was considerably less than for the previous year, owing to a change of tenants which occasioned a temporary loss of gross income and larger outlay for repairs. The outlook for the immediate future of the Bussey stores is better than it has been for some time. The misfortunes of the Bussey stores have been chiefly due to the great Boston fire of 1872. Since the fire the two large stores in Franklin and Arch Streets have on the average paid only a fair return on the actual cost of the new buildings, allowing nothing for the value of the land. All the other Bussey stores, taken as a whole, now yield net about two thirds as much as during the best years before the fire, the falling off of income being no greater than that on the average of the "general investments."

Gifts have been received during the year as follows:—

TO FORM NEW FUNDS OR INCREASE OLD ONES.

From Edward Russell, $200, to increase the scholarship founded by him.

From the executors of Mrs. Mary W. Swett, $15,765.11, for the use of the Medical Department.

From the executors of Samuel W. Swett, $20,000, for the use of the Medical Department.

From David Pulsifer Kimball, ten bonds of the Fremont, Elkhorn & Missouri Valley Railroad Co. (consolidated mortgage 6s of 1933) of $1000 each, for the establishment of two or more scholarships to be known as the Scholarships of the Class of 1856.

From the executors of Almira Jarvis, $500, the interest of which is to be appropriated to the use of the Library; also a German atlas. These bequests were made by her to carry out the wishes of her husband, Dr. Edward Jarvis, as expressed in his will, which was to take effect only in case he should survive his wife.

From Professor John Tyndall, $10,800, to found a scientific scholarship.

From John Eliot Thayer, $15,000, to establish a publication fund in the department of Political Economy.

Subscriptions for the further endowment of the Divinity School, paid to Sept. 1, 1885, from

Rev. E. H. Hall	$20	Henry Lee	$300
			$320

Subscriptions for the endowment of the Jefferson Physical Laboratory, paid to Sept. 1, 1885, from

Alexander Agassiz . . .	$25,000	E. W. Hooper	$200
			$25,200

The endowment for the Jefferson Physical Laboratory now amounts to $72,500. One subscription of $2500, which was made anonymously through Mr. Agassiz, is yet to be paid in, and when paid it will complete the endowment.

Subscriptions to be applied towards a fund for the endowment of the Dental School, paid to Sept. 1, 1885, from

Dr. George H. Ames . .	$20.	Dr. A. B. Jewell	$20.
Dr. A. G. Bouvé	40.	Dr. H. C. Meriam . . .	20.
Dr. E. P. Bradbury . . .	20.	Dr. W. E. Page	40.
Dr. E. C. Briggs	20.	Dr. L. D. Shepard . . .	20.
Dr. D. M. Clapp	20.	Dr. S. S. Silva	20.
Dr. George Cunningham .	10.19	Dr. E. H. Smith	20.
Dr. E. E. Frost	20.	Dr. J. G. W. Werner . .	20.
Dr. Thomas Fillebrown .	20.		$330.19

Subscriptions to be applied towards a fund for the endowment of the Observatory, paid to Sept. 1, 1885, from

J. I. Bowditch	$1000	E. W. Hooper	$93.43
T. Q. Browne	100	F. H. Peabody	100.
Chas. P. Curtis	500	Prof. E. C. Pickering . .	400.
George Higginson . . .	2000		$4193.43

From the Treasurer of the Class Subscription Fund, an additional payment of $20,000.

From the Trustees under the will of the late Professor Daniel Treadwell, property valued at $5609.25, as a partial payment of Professor Treadwell's residuary legacy for the use of the College Library.

GIFTS FOR IMMEDIATE USE.

From the Massachusetts Society for Promoting Agriculture, $2000, to be used for the salary of Mr. Sereno Watson for the years ending August 31, 1884, and August 31, 1885.

From George W. Wales, $200, for books for the Library, in continuance of former gifts for the same purpose.

From Henry Lee, $50, subscription to aid in publishing the University Bulletin. By the failure of the Treasurer to send in time the usual notices, $300 of subscriptions for the Bulletin were not received until after Sept. 1, 1885, but they will be brought into the next year's account.

From Robert N. Toppan, $150, to be used as a prize on Political Science in the graduate department of the University, in continuance of former gifts for the same purpose.

From an anonymous friend, $500, to increase the salary of the Professor of Entomology.

From Henry Lee, $1500, for the salary of an Instructor in Political Economy (second annual payment).

From H. H. Hunnewell and F. L. Ames, $1100 each, the balance of their gifts for a new greenhouse at the Botanic Garden; and from B. P. Cheney, $1600, for the same purpose.

Subscriptions for immediate use of the Botanic Garden, paid to Sept. 1, 1885, from

The Misses Collamore . . .	$50	H. C. Lodge	$50
Mrs. H. S. Grew	25	Augustus Lowell	100
Henry Lee	100	Miss Laura Norcross . . .	500
			$825

From W. D. Pickman, $500, as an additional subscription towards the fund for the new building for the Medical School.

From the Dante Society, $50, for the purchase of books on Dante.

From the Class in History 13, $14.38, for the purchase of books.

From Edward Austin, $5500, as additional gifts for Austin Hall.

Subscriptions towards the salary of an Assistant in the Observatory, paid to Sept. 1, 1885, from

Arthur W. Blake	$250	**Charles Head**	$25
Francis Blake	200	**James Huntington**	10
W. S. Bullard	50	**David P. Kimball**	100
S. C. Chandler	100	**Stephen Salisbury**	200
George B. Clark	20	**Arthur Searle**	50
F. A. Haserick	25	**Charles Williams, Jr.**	50
			$1080

For Lecturer on Political Economy, through William Gray, Treas., $300.

From Henry Lee, as Treasurer of the Harvard Memorial Hall Fund, $565.26, being the amount received by him as a legacy of $500 for Memorial Hall, from the late Seth Turner, and the interest accrued thereon. The whole to be used for pointing the masonry of Memorial Hall.

From Harold Whiting, $200, for Physics 2.

Anonymous gift for special work in Pathology, $200.

From Mrs. C. M. Barnard, $600, as her annual gift for the Warren H. Cudworth Scholarships.

The total amount of these gifts for immediate use is $18,034.64, as is also stated on page 14 of this report.

OTHER GIFTS.

From Mrs. Emily E. Abbot, the library of her husband, the late Professor Ezra Abbot.

From an anonymous friend, a portrait of Daniel Webster in marble bas-relief for the Law School.

From Norman Mason, sets of microscope specimens of pure starches, fibres, and other materials.

From the Executive Committee of the Longfellow Memorial Fund, a cast of the bust of Longfellow, recently placed in the Poets' Corner of Westminster Abbey by his English admirers.

From the heirs of George Ticknor, his collection of books by and relating to John Milton.

From Professor J. Henry Thayer, a copy of the Revised Old Testament, for use in the pulpit of Appleton Chapel.

A bronze medallion portrait, by Augustus St. Gaudens, of Professor Asa Gray, from a few of his friends.

From Miss Maria Fay, a portrait of Judge Story by Harding.

From an anonymous friend, a mounted skeleton of the human subject for the School of Veterinary Medicine.

EDWARD W. HOOPER, *Treasurer.*

BOSTON, Jan. 8, 1886.

ACCOUNTS.

General Statement of Receipts and Disbursements for the year ending

INCOME.

Interest on notes, mortgages, and advances, ...		$39,932.49
" " Massachusetts 5% Bonds, ...		1,252.78
" " Policy Mass. Hospital Life Insurance Co., ...		200.00
" " New Boston Coal Mining Co. Bonds, ...		700.00
" " Railroad Bonds (after deductions for sinking premiums).		
Atchison, Topeka & St. Fe, 7%, ...	$11,100.00	
Buffalo, Bradford & Pittsburg, ...	4,200.00	
Burlington & Mo. River in Nebraska, 6%,	14,408.92	
Atchison & Nebraska, 7%, ...	8,906.67	
Marion & McPherson 1st Mortg., 7%, .	9,000.00	
Ionia & Lansing, 1st Mortg., 8%, ...	12,000.00	
Marq., Hough. & Onton., 6%, ...	1,679.92	
Kan. City, St. Joseph & Council Bluffs, 7%,	3,000.00	
Kansas City, Topeka & Western, 7%, . .	6,480.00	
Michigan Southern & Northern Indiana,	70.00	
Fort Scott, So. E. & Memphis, 7%, . . .	4,479.17	
Kansas City & Cameron, 10%, ...	10,537.08	
Lincoln & No. Western, 7%, ...	3,971.34	
Eastern Railroad, 6%, ...	2,503.16	
Fremont, Elkhorn & Mo. Valley, 6%, . .	300.00	
		92,636.26
" " Municipal Bonds.		
Cincinnati, ...	140.00	
Minneapolis, ...	160.00	
		300.00
Dividends on Stocks.[1]		
Charles River National Bank, ...	480.00	
First (Cambridge) " "	400.00	
Fitchburg " "	144.00	
Massachusetts " "	120.00	
Merchants " "	1,584.00	
New England " "	222.00	
Old Boston " "	500.00	
Schenectady " " (N. Y.),	250.00	
Bank taxes refunded, ...	1,174.80	
		4,874.80
Amoskeag Manufacturing Co., ...	1,080.00	
Massachusetts " "	140.00	
Merrimack " "	1,020.00	
Stark Mills " "	480.00	
Wamsutta " "	192.00	
Pacific Mills, ...	2,000.00	
		4,912.00
Chicago, Burlington & Quincy R. R., . .	8,408.00	
Pittsfield & North Adams R. R., ...	315.00	
Quincy Railroad Bridge Company, . . .	100.00	
Pittsburg, Ft. Wayne & Chicago R. R., .	350.00	
		9,173.00
Pennsylvania Coal Co., ...		1,496.00
Amount carried forward, ...		$155,477.33

by the Treasurer of Harvard College,
August 31, 1885.

EXPENSES.

Paid to account of Expenses in the			
University, as per Table I. (page 34),			$42,699.21
College, " " II. (page 36).			
Salaries for instruction,		$152,175.56	
Repairs,		4,753.31	
Insurance on College Edifices, not valued on Treasurer's books,		1,295.83	
General Expenses,		40,798.20	
Scholarships,		26,245.00	
Beneficiaries,		1,832.00	
Prizes,		830.38	
Botanic Garden,		10,887.51	
Herbarium,		1,737.75	
Gymnasium,		8,947.79	
Jefferson Physical Laboratory,			
Spent on building,	$20,558.19		
Laboratory expenses,	2,950.32	23,508.51	
			273,011.84
Library, as per Table III. (page 41).			
Books,		16,534.20	
Salaries and other expenses,		23,192.56	
			39,726.76
Divinity School, as per Table IV. (page 43).			
Salaries and other expenses,		21,707.20	
Scholarships and Beneficiaries,		2,067.63	
			23,774.83
Law School, as per Table V. (page 45),			38,304.25
Medical School, as per Table VI. (page 46),			61,514.68
Dental School, as per Table VII. (page 48),			6,965.78
Lawrence Scientific School, as per Table VIII. (page 48).			
Salaries and other expenses,		13,205.87	
Museum of Comparative Zoölogy,		19,516.33	
			37,722.20
Observatory, as per Table IX. (page 49),			16,542.98
Bussey Institution,	as per Table X. (page 50),	7,410.28	
School of Veter'y Medicine,		23,930.54	
Arnold Arboretum,		9,918.93	
			41,259.75
Amount carried forward			$581,522.28

General Statement of Receipts and Disbursements for the year ending

INCOME.

Amount brought forward, . .		$155,477.33
Real Estate, from rents, &c. (gross receipts).		
Cambridge (Houses and Lands), ...	$35,826.40	
Boston (general investments), ...	84,567.40	
Bussey stores, ...	33,763.55	
Sundry estates, ...	6,855.52	
		160,532.87
Term Bills.		
College, as per Table II., ...	185,715.10	
Divinity School, as per Table IV., ...	3,416.61	
Law School, as per Table V., ...	22,110.00	
Medical School, as per Table VI., ...	52,704.15	
Dental School, as per Table VII., ...	5,623.03	
Lawrence Scientific School, as per Table VIII., .	4,516.67	
School of Veterinary Medicine, as per Table X., .	2,116.00	
Bussey Institution, as per Table X., ...	680.00	
		276,881.56
Sundries.		
From Wm. Pennoyer Annuity, ...	277.50	
Trustees of Thayer Scholarships, ...	3,500.00	
" Count Rumford's Legacy, . . .	579.96	
" Edward Hopkins, ...	233.16	
For use of Library by resident graduates and others,	155.00	
Degrees of Ph.D., ...	240.00	
Fees for admission examinations, &c., ...	728.00	
Fees in Infirmary and Laboratory, Dental School, .	1,661.06	
Printing by College Press for other departments, .	3,703.87	
Sales of grass, wood, and old material, ...	1,885.31	
Sales of old examination papers, ...	54.97	
Sale of time signals from Observatory, ...	2,725.00	
Sale of tickets to Commencement Dinner of 1885, .	922.00	
Sale of books, pamphlets, catalogues, &c., ...	1,724.72	
Subscriptions to Veterinary Hospital, ...	1,320.00	
Board of horses, cattle, &c. at Bussey Institution, .	1,890.67	
Fees from Veterinary Hospital and Forge, ...	12,984.81	
Use of lockers at Gymnasium, ...	1,802.00	
Fees for use of Gymnasium, ...	40.00	
Repayment of sundry advances, ...	258.85	
Proportion of expenses of Bursar's office repaid by other departments, ...	405.18	
Proportion of expenses of Gymnasium repaid by other departments, ...	1,212.61	
Old loan to a student, repaid with interest, ...	116.25	
Unexpended balance of Foster Fund income for Medical students returned, ...	276.65	
Laboratory instruction to Dental and Veterinary students, ...	400.00	
		39,097.57
Sundry gifts for immediate use, see page 10, ...		18,034.64
Total amount of income, carried forward, . . .		$650,023.97

by the Treasurer of Harvard College,
August 31, 1885.

EXPENSES.

Amount brought forward,			$581,522.28
Real Estate, expenses.			
Insurance.			
Cambridge,	$338.75		
Boston,	212.50		
Bussey stores,	617.50		
		$1,168.75	
Taxes.			
Cambridge,	2,086.84		
Boston,	15,158.90		
Bussey stores, &c.,	8,878.58		
		26,124.32	
Interest.			
Bussey stores (on advances),		2,013.30	
Repairs, improvements, care, cleaning and sundries.			
Cambridge,	10,983.10		
Boston,	7,187.47		
Bussey stores,	3,842.57		
		22,013.14	
Heating and hoisting for Bussey stores, including repairs and renewal of apparatus,	5,705.44		
Less for sales of heat and power,	2,270.00		
		3,435.44	
			54,754.95
Annuities.			
Bussey,		6,300.00	
Gore,		600.00	
Lucy Osgood,		420.00	
Class of 1802,		120.00	
Anonymous,		720.00	
Bemis,		2,685.00	
			10,845.00
Sundry payments from income.			
To the Treasurer of the Museum of Fine Arts, from Gray Fund for Engravings,		1,163.08	
The income of the Daniel Williams Fund for the benefit of the Herring Pond and Mashpee Indians,		845.89	
The income of the Sarah Winslow Fund, to the Minister and Teacher at Tyngsboro', Mass.,		243.68	
			2,252.65
Amount carried forward,			$649,374.88

General Statement of Receipts and Disbursements for the year ending

Total amount of income, brought forward, . .		$650,023.97
RECEIPTS EXCLUSIVE OF INCOME.		
GIFTS.		
Edward Russell Scholarship (additional), ...	$200.00	
Scholarships of the **Class of 1856,**	10,000.00	
John Tyndall Scholarship, ...	10,800.00	
Class Subscription Fund (additional), ...	20,000.00	
Mary W. Swett Fund, ...	15,765.11	
Samuel W. Swett Fund, ...	20,000.00	
John Eliot Thayer Publication Fund, ...	15.000.00	
Jarvis Fund, ...	500.00	
Daniel Treadwell Fund, ...	5,609.25	
Subscriptions for endowment of Physical Laboratory, .	25,200.00	
" " " " Divinity School, . . .	320.00	
" " " " Observatory, ...	4,193.43	
" " " " Dental School, . . .	330.19	
		127,917.98
SALES.		
$33,000 Burl. & Mo. R. (Neb.) R.R. 6% c. Bds. (paid off),	33,000.00	
50,000 " " " " " " " Bonds, ...	53,470.83	
19,000 Marq., Hough. & Ont. " " "	18,905.00	
1,000 Mich. So. & No. Indiana " 7% Bond (paid off),	1,000.00	
70,000 Eastern R. R. 6% Bonds, ...	85,482.50	
Sale of rights to take new stock in Chic., B. & Qu. R. R.,	825.75	
" " House No. 50 Allen St. for the Dental School,	9,400.00	
" " Holmes House to the Law School, ...	3,000.00	
		205,084.08
SUNDRIES.		
From Dining Hall Association, to reduce debt, . . .	1,500.00	
" Athletic Association, loan repaid, ...	1,000.00	
Advances to premiums, on $947,000 R. R. Bds., repaid,	12,290.00	
" " accrued interest on Bonds repaid, ...	7,383.58	
		22,173.58
Notes and Mortgages paid off, ...	793,612.17	
Less invested in Notes and Mortgages, ...	735,000.00	
		58,612.17
Balance, September 1, 1884.		
Cash in Suffolk National Bank, ...	$13,961.49	
Cash in hands of Allen Danforth, Bursar, ...	5,807.94	
Term Bills due October, 1884, ...	84,041.23	
" " overdue, ...	2,623.16	
		106,433.82
Total, ...		$1,170,245.60

by the Treasurer of Harvard College,
August 31, 1885.

EXPENSES.

Total of expenses brought forward, ...	$649,374.88

INVESTMENTS AND SUNDRY PAYMENTS.

Burl. & Mo. River(Neb.) R.R.	6%	Bonds,	$20,000	cost,	$21,305.00	
Lincoln & No. Western	" 7%	"	7,000	"	8,540.00	
Kansas City & Cameron	" 10%	"	9,000	"	11,340.00	
Eastern R. R. sterling	6%	"	£43,700	"	243,685.16	
Eastern	" 6%	"	$70,000	"	81,900.00	
Mass. 5% bond, 1894 (Paine Fund),			1,000	"	1,140.00	
On acct. of 100 sh. new stock Chic., Burl. & Qu. R. R.,					6,000.00	
						373,910.16
Paid for accrued interest on above Bonds, ...						5,793.84

Property received as a portion of the **Daniel Treadwell Fund**:

15	shares	Boston & Albany R. R. Co.,	valued at	$2,711.25	
6	"	Boston & Providence "	" " "	1,096.50	
9	"	Fitchburg "	" " "	1,049.00	
2	"	Ports., Gt. Falls & Con.	" " "	79.50	
18	"	Cambridge Lyceum,	" "	540.00	
					5,476.25

Received as a special investment of the Scholarships of the **Class of 1856**:

$10,000 Fremont, Elkhorn & Mo. Valley R. R. 6s,		10,000.00
Paid Baring Brothers & Company, in account, ...	15,643.93	
Less drafts on Baring Brothers & Company, . .	13,471.78	
		2,172.15
Paid on account of Mr. Agassiz's note from income of Memorial Fund, ...		6,587.17

Balance, August 31, 1885.

Cash in Suffolk National Bank, ...	$18,227.23	
Cash in hands of Allen Danforth, Bursar, ...	5,816.29	
Term Bills due October, 1885, ...	90,324.64	
" " overdue, ...	2,563.49	
		116,931.65
Total, ...		$1,170,245.60

The following Account exhibits the State of the Property, as embraced in the Treasurer's Books, August 31, 1885.

Notes and Mortgages.				
Mortgages, ...			$143,500.00	
Long Wharf Co.'s Note, ...			55,000.00	
Manufacturing Co.'s Notes, ...			400,000.00	
*Personal Notes for Agassiz Memorial Fund, .			27,487.01	
*Personal Note for Physical Laboratory Endowment, ...			15,000.00	$640,987.01
*Massachusetts 5% Bonds, ...	$25,500	valued at		29,247.50
New Boston Coal Mining Co. Bonds,	10,000	" "		9,000.00
Municipal Bonds.				
*Cincinnati, ...	2,000	" "	2,000.00	
*Minneapolis, ...	2,000	" "	2,000.00	
				4,000.00
Railroad Bonds.				
Burl. & Mo. R. in Nebr. non ex. 6%,	210,000	val'd at	214,737.67	
Kan. City, St. Jos. & C. B., 1st M., 7%,	50,000	" "	50,000.00	
Lincoln & No. West., 1st M., 7%,	70,000	" "	70,000.00	
Kan. City & Camer., 1st M., 10%,	150,000	" "	150,000.00	
Atchison & Nebraska, 1st M., 7%,	150,000	" "	150,000.00	
Atch., Top. & St. Fé, 1st M., 7%,	185,000	" "	185,000.00	
Kan. City, Top. & West., 1st M., 7%,	108,000	" "	108,000.00	
Marion & McPherson, 1st M., 7%,	150,000	" "	150,000.00	
Ionia & Lansing, 1st Mortg., 8%,	150,000	" "	149,901.25	
Ft. Scott, So. E. & Mem., 1st M., 7%,	100,000	" "	100,000.00	
*Buffalo, Bradford & Pittsb., 7%,	60,000	" "	60,000.00	
*Fremont, Elkh. & Mo. Val., 6%,	10,000	" "	10,000.00	
Eastern R. R. Sterling, 6%,	£43,700	" "	243,685.16	
Railroad Bond Premiums, ...			138,530.17	
				1,779,854.25
Railroad Stock.				
Chicago, Burlington & Quincy,	1,101	shares,	108,435.33	
*Pittsburgh, Fort Wayne & Chicago,	50	"	5,000.00	
Pittsfield & North Adams, ...	63	"	6,300.00	
Quincy R. R. Bridge Co., ...	10	"	1,250.00	
*Boston & Albany, ...	15	"	2,711.25	
*Boston & Providence, ...	6	"	1,096.50	
*Fitchburg	9	"	1,049.00	
*Ports., Gt. Falls & Con.	2	"	79.50	
				125,921.58
Manufacturing Stock.				
Amory, ...	36	shares,	3,600.00	
Amoskeag, ...	12	"	10,800.00	
Massachusetts Mills, ...	7	"	6,600.00	
Merrimack, ...	17	"	17,000.00	
Nashua, ...	36	"	25,560.00	
New Bedford Copper Co., ...	5	"	250.00	
Pacific Mills, ...	20	"	17,468.29	
Stark Mills, ...	12	"	11,900.00	
Wamsutta Mills, ...	96	"	10,480.00	103,658.29
Amount carried forward, ...				$2,692,668.63

Amount brought forward, ...			$2,692,668.63
Bank Stock.			
Charles River, ...	60 shares,	6,000.00	
First Cambridge, ...	50 “	5,000.00	
Fitchburg, ...	24 “	2,403.00	
Massachusetts, ...	12 “	3,000.00	
Merchants, ...	264 “	34,732.00	
New England, ...	37 “	3,896.00	
Old Boston, ...	200 “	8,933.00	
*Schenectady (N. Y.), ...	50 “	2,800.00	
			66,764.00
Real Estate.			
Houses and Lands in Cambridge yielding income,		353,988.83	
Unimproved Lands in Cambridge, ...		71,942.79	
*Bussey Real Estate in Boston and Dedham, . .		413,092.80	
Amory Estate, Franklin Street, Boston, . . .		165,615.81	
Webb Estate, Washington Street, Boston, . .		164,604.79	
Andrews Estate, Washington Street, Boston, .		165,562.00	
Gray Estate, Washington Street, Boston, . . .		487,119.12	
Estate on Hawley Street, Boston, ...		38,650.78	
Estate on Hawkins Street, Boston, ...		29,476.09	
*Ward's (Bumkin) Island, Boston Harbor, . .		1,200.00	
Reversion of Buildings on Brattle Street, Boston,		1,000.00	
*Land in Dorchester, ...		1,294.30	
Estate on Townsend Street, ...		10,222.70	
			1,903,770.01
Sundries.			
*In hands of Count Rumford's Trustees in Paris,		10,000.00	
*Annuity of William Pennoyer, valued at . . .		4,444.44	
*Policy of the Mass. Hospital Life Insurance Co.,		5,000.00	
*Pennsylvania Coal Co., 187 shares, ...		25,525.50	
*Cambridge Lyceum, 18 shares		540.00	
Due from Dining Hall Association, ...		31,732.16	
“ “ Lawrence Scientific School, ...		2,137.79	
“ “ Bussey Trust, ...		40,266.13	
“ “ Dental School, ...		4,947.04	
“ “ Observatory, ...		1,178.56	
“ “ School of Veterinary Medicine, . . .		13,322.94	
“ “ Law School, ...		218.28	
Baring Brothers & Co., ...		2,945.56	
Term bills due October, 1885, ...		90,824.64	
“ “ overdue, ...		2,563.49	
			235,146.53
Cash in Suffolk National Bank, ...		18,227.23	
“ “ hands of Allen Danforth, Bursar, ...		5,816.29	24,043.52
Total, ...			$4,922,392.69

* Special Investments.

The foregoing Property represents the following Funds and Balances, and is answerable for the same.

UNIVERSITY FUNDS.

Principal, Sept. 1, 1884.		Principal, Aug. 31, 1885.	
$87,404.35	**Stock Account** (so called), ...	$89,357.78	
141,638.74	Insurance and Guaranty Fund (so called),	141,638.74	
5,250.00	**Samuel D. Bradford** Fund, ...	5,250.00	
15,750.00	**Israel Munson** Fund, ...	15,750.00	
16,871.63	**Leonard Jarvis** Fund, ...	16,871.63	
1,117.32	**Peter C. Brooks** Fund, ...	572.84	
155.07	**Thomas Cotton** Fund, ...	155.45	
56,979.61	**John Parker** Fellowships, ...	56,873.62	
10,820.23	**Harris** Fellowships, ...	11,132.76	
11,680.85	**John Thornton Kirkland** Fellowship,	11,940.13	
10,686.09	**James Walker** Fellowship, ...	10,516.34	
30,305.55	**Rogers** Scholarship, ...	31,151.17	
1,874.54	**Sumner** Prize Fund, ...	1,976.35	
150.00	**Robert N. Toppan** Prizes	150.00	
9,000.00	**Sever** Fund (unrestricted)	9,000.00	
27,228.86	Retiring Allowance Fund, ...	28,707.39	
25,000.00	**John C. Gray** Fund, ...	25,000.00	
61,784.85	President's Fund, ...	62,139.78	
110,155.29	**George B. Dorr** Fund, ...	110,155.29	
5,000.00	**Seth Turner** Fund, ...	5,000.00	
80,556.72	**Henry T. Morgan** Fund, ...	80,556.72	
	John Tyndall Scholarship, ...	10,897.74	
			$724,793.73

COLLEGE FUNDS.

27,748.64	**Alford** Professorship, ...	27,748.64	
28,337.40	**Boylston** “	28,337.40	
21,619.50	**Eliot** “	21,619.50	
10,000.00	“ “ **(Jon. Phillips's gift)**,	10,000.00	
3,500.01	**Erving** “	3,500.01	
35,990.99	**Fisher** “	35,990.99	
20,217.08	**Hersey** “	20,217.08	
20,624.30	“ “ **(Thomas Lee's gift)**,	21,744.18	
3,747.33	**Hollis** “ (Mathematics), . .	3,747 33	
34,447.13	**Hollis** “ (Divinity), . . .	34,517.60	
43,062.93	**McLean** “	43,062.93	
21,000.00	**Perkins** “	21,000.00	
25,020.19	**Plummer** “	25,020.19	
52,500.00	**Pope** “	52,500.00	
52,996.37	**Rumford** “	52,996.37	
23,139.83	**Smith** “	23,139.83	
16,240.38	Fund for Permanent Tutors, ...	16,240.38	
$1,149,601.78	. . . . . . **Amounts carried forward,**	**$441,382.43**	**$724,793.73**

Principal, Sept. 1, 1884.		Principal, Aug. 31, 1885.	
$1,149,601.78	. . . . Amounts brought forward,	$441,382.43	$724,793.73
125,000.00	**Class Subscription Fund**, ...	145,000.00	
12,894.89	**Daniel H. Peirce** "	12,959.36	
2,255.84	**Paul Dudley Fund for Lectures**, .	2,378.34	
31,500.00	**Jonathan Phillips Fd.** (unrestricted)	31,500.00	
1,050.00	**John A. Blanchard** " "	1,050.00	
3,793.15	**John W. P. Abbot** " "	3,999.11	
5,600.00	**Daniel Austin** " "	5,600.00	
344.68	**Henry Flynt's Bequest**, ...	345.53	
2,523.51	**Abbot** Scholarship, ...	2,660.56	
801.42	**Alford** "	844.91	
5,190.75	**Bartlett** "	5,222.61	
5,459.28	**Bassett** "	5,480.70	
11,513.78	**Bigelow** "	11,388.99	
107,800.54	**Bowditch** "	108,654.18	
230.17	**Bright** " (balance), . . .	337.67	
2,737.86	**Browne** "	2,736.53	
600.00	**Warren H. Cudworth** Scholarships,	600.00	
7,175.32	**Class of 1802** Scholarship, ...	7,194.92	
3,030.80	" **1814** "	2,995.38	
5,049.64	" **1815** " (**Kirkland**),	5,073.86	
3,751.32	" **1817** "	3,755.00	
1,420.89	" **1828** "	1,498.05	
2,616.85	" **1835** "	2,608.95	
3,995.96	" **1841** "	4,037.94	
3,328.45	" **1852** " (**Dana**), .	3,509.16	
	" **1856** "	10,000.00	
7,398.27	**Crowninshield** "	7,799.98	
6,064.63	**Ruluff S. Choate** "	6,093.96	
5,259.50	**Derby** "(George & Martha),	5,295.12	
5,326.37	**W. S. Eliot** "	5,315.57	
5,927.88	**Farrar** "	5,899.77	
2,488.71	**Greene** "	2,503.86	
7,099.55	**Hodges** "	7,485.08	
5,468.38	**Levina Hoar** "	5,565.29	
4,886.04	**Hollis** "	4,901.35	
980.77	**Matthews** " (balance), .	1,511.15	
7,505.81	**Morey** "	7,413.39	
6,620.96	**Pennoyer** "	6,636.67	
2,517.80	**Perkins** "	2,534.58	
641.29	**Rodger** "	676.10	
3,194.96	**Henry B. Rogers**	3,218.45	
1,097.32	**Edward Russell** "	1,367.75	
4,287.83	**Saltonstall** " (Mary & Leverett),	4,520.67	
708.25	" " (Dorothy), . .	746.69	
5,450.77	**Slade** "	5,496.76	
3,167.19	**Sever** "	3,164.16	
9,432.85	**Sewall** "	9,445.06	
44,750.00	**Shattuck** "	45,279.93	
$1,639,542.01	. . . Amounts carried forward, . .	$965,685.42	$724.793.73

Principal, Sept. 1, 1884.		Principal, Aug. 31, 1885.	
$1,639,542.01	. . . Amounts brought forward, .	$965,685.42	$724,798.73
2,755.36	**Story** Scholarship, ...	2,754.96	
2,174.77	**Stoughton** "	2,222.55	
4,091.61	**Gorham Thomas** "	4,063.81	
6,671.33	**Toppan** "	6,733.57	
24,730.03	**Townsend** "	24,572.87	
3,963.21	**Walcott** "	3,978.40	
9,606.43	**Whiting** "	10,128.04	
9,462.00	Exhibitions, ...	9,520.79	
1,784.48	**Palfrey** Exhibition, ...	1,791.35	
1,200.00	**Samuel Ward** Fund, ...	1,200.00	
1,180.02	**John Glover** "	1,244.09	
10,888.65	**Quincy Tufts** "	10,944.92	
5,288.54	**Day** "	5,335.73	
10,206.20	**Munroe** "	10,298.39	
15,742.18	**Lee** Fund for Reading, ...	15,796.97	
4,293.17	**Boylston** Prizes for Elocution, . .	4,271.28	
11,704.06	**Bowdoin** Prizes for Dissertations, .	11,989.59	
1,071.46	**Hopkins** Gift for "Deturs," . . .	1,137.40	
505.37	**Chauncey Wright** Fund, ...	532.79	
	John E. Thayer "	15,000.00	
42,418.01	Botanic Department "	42,330.29	
52,882.31	**Lowell** Fund for a Botanic Garden, .	52,882.31	
17,130.71	Herbarium Fund, ...	18,397.09	
125.00	Salary account (unexpended balance),	125.00	
47,121.46	Physical Laboratory Endowment, . .	72,500.00	
	Jefferson Physical Laboratory, . .	702.76	
20,691.57	Physical Laboratory Building Fund, .	295.29	1,296,435.66
	LIBRARY FUNDS.		
100,000.00	**Eben Wright** Fund, ...	100,000.00	
	Daniel Treadwell Fund, ...	5,609.25	
	Jarvis Fund, ...	500.00	
10,764.62	Subscription for Library, ...	10,587.55	
2,105.47	**Bowditch** Fund, ...	2,064.28	
647.61	**Bright** "	117.16	
5,264.95	**Denny** "	5,327.66	
5,316.10	**Farrar** "	5,452.68	
3,693.57	**Haven** "	3,643.80	
5,557.32	**Hayward** "	5,267.79	
2,512.03	**Hollis** "	2,351.18	
2,103.58	**Homer** "	2,118.03	
5,338.96	**Lane** "	5,374.84	
20,863.89	**Lowell** "	21,179.62	
60,193.79	**Minot** "	59,629.03	
7,164.86	**Osgood** " (Mary), ...	7,063.46	
7,201.74	" " (Lucy), ...	7,192.80	
5,251.09	**Salisbury** "	5,293.10	
$2,191,209.52	. . . . . Amounts carried forward,	$248,772.23	$2,021,229.39

Principal, Sept. 1, 1884.		Principal, Aug. 31, 1885	
$2,191,209.52	. . . . . Amounts brought forward,	$248,772.23	$2,021,229.39
20,109.93	**Sever** Fund,	20,074.04	
4,162.51	**Shapleigh** “	4,047.79	
37,364.73	**Sumner** “	37,482.51	
5,070.30	**Tucker** “	5,083.80	
5,251.35	**Ward** “	5,302.97	
.28	**Wales** “	70.00	
16,142.97	**Walker** “	15,964.14	
71.40	Sundry gifts, etc. (unexpended balances),	53.61	336,851.09

LAW SCHOOL FUNDS.

6,339.03	**Law** School (balance),		
15,750.00	**Dane** Professorship,	15,750,00	
23,979.82	**Bussey** “	23,979.82	
8,340.81	**Royall** “	8,340.81	
93,201.87	New “	93,768.65	
32,021.25	**Law** School Book Fund,	32,021.25	173,860.53

MEDICAL SCHOOL FUNDS.

52,940.50	Medical School (balance),	54,979.60	
19,192.65	**Jackson** Medical Fund,	19,192.65	
17,129.20	**Geo. C. Shattuck** “	17,129.20	
12,219.44	**Warren** Fund for Anatom'l Museum,	12,570.25	
3,886.46	**Boylston** Fund for Medical Prizes,	4,086.56	
2,531.86	“ “ “ “ Books,	2,669.35	
3,002.69	Medical Library Fund,	2,780.55	
2,000.00	**Quincy Tufts** Medical Fund,	2,000.00	
25,512.68	**Edward M. Barringer** “	25,512.68	
	Mary W. Swett “	15,765.11	
	Samuel W. Swett “	20,000.00	
	Samuel E. Fitz “	75.14	
	Foster Fund for Medical Students,	492.42	177,253.51

DIVINITY SCHOOL FUNDS.

24,206.54	General Fund,	24,966.59	
37,583.74	**Bussey** Professorship,	37,583.74	
16,015.81	**Parkman** “	16,015.81	
6,008.43	**Hancock** “	6,008.43	
45,345.73	**Winn** Prof. of Ecclesiastical History,	45,845.73	
20,280.38	**Dexter** Lectureship,	20,280.38	
9,184.69	**Henry Lienow** Fund,	9,184.69	
5,250.00	**Mary P. Townsend** “	5,250.00	
2,100.00	**Winthrop Ward** “	2,100.00	
1,050.00	**Samuel Hoar** “	1,050.00	
1,050.00	**Abraham W. Fuller** “	1,050.00	
1,050.00	**Caroline Merriam** “	1,050.00	
13,134.06	**Jackson** Foundation,	13,207.24	
$2,779,690.63	. . . . . Amounts carried forward,	$183,592.61	$2,709,194.52

Principal, Sept. 1, 1884.		Principal, Aug. 31, 1885.	
$2,779,690.63	. . . . Amounts brought forward,	$183,592.61	$2,709,194.52
2,177.95	**Joshua Clapp Fund,**	2,177.95	
1,050.00	**William Pomeroy Fund,** . . .	1,050.00	
525.00	**Hannah C. Andrews Fund,** . .	525.00	
3,693.53	**J. Henry Kendall Scholarship,** . .	3,800.77	
3,078.04	**Nancy Kendall** " . . .	3,105.18	
911.34	**Lewis Gould Fund,**	911.34	
876.66	**Adams Ayer** "	924.28	
7,875.00	**Joseph Baker** "	7,875.00	
5,113.27	**Thomas Cary Scholarships,** . . .	5,040.91	
2,288.57	**George Chapman Scholarship,** .	2,272.86	
3,384.89	**Joshua Clapp** " . .	3,443.70	
1,860.61	Beneficiary money returned, . . .	1,961.66	
40,000.00	**Th. Tileston of New York Endowm't,**	40,000.00	
10,000.00	**Henry P. Kidder Fund,**	10,000.00	
1,000.00	**Abby Crocker Richmond Fund,** .	1,000.00	
70,207.02	New Endowment, ...	70,527.02	
17,000.00	**Oliver Ames Fund,**	17,000.00	
800.00	**Daniel Austin Fund,**	800.00	
11,577.10	**Abner W. Buttrick Fund,** . . .	11,680.73	
			367,689.01

LAWRENCE SCIENTIFIC SCHOOL, AND MUSEUM OF COMPARATIVE ZOÖLOGY FUNDS.

38,807.17	Professorship of Engineering, . .	38,807.17	
2,860.50	Professorship of Chemistry, . . .	2,860.50	
61,536,43	**Abbott Lawrence Fund,**	61,536.43	
50,375.00	**James Lawrence** "	50,375.00	
30,686.85	**John B. Barringer** "	30,686.85	
100,170.00	**Sturgis Hooper** "	100,430.00	
50,000.00	**Gray Fund for Zoölogical Museum,**	50,000.00	
297,933.10	**Agassiz Memorial Fund,** . .	297,933.10	
7,594.01	Teachers' and Pupils' Fund, . .	7,594.01	
117,469.34	Permanent Fund, ...	117,469.34	
7,740.66	**Humboldt Fund,**	7,740.66	
			765,433.06

OBSERVATORY FUNDS.

110,293.88	**Edward B. Phillips Fund,** . . .	110,293.88	
21,000.00	**James Hayward** " . . .	21,000.00	
23,661.41	**David Sears** " . . .	24,303.81	
10,941.75	**Josiah Quincy** " . . .	10,577.07	
2,000.00	**Charlotte Harris** " . . .	2,000.00	
5,000.00	**Thomas G. Appleton** " . . .	5,000.00	
10,000.00	Anonymous Observatory **Fund** (at present charged with an Annuity),	10,013.58	
39,606.57	Observatory Endowment, ...	43,800.00	
			226,988.34
$3,950,786.28	. . . . . Amounts carried forward		$4,069,304.93

Principal, Sept. 1, 1884.		Principal, Aug. 31, 1885.	
$3,950,786.28	. . . . Amounts brought forward		$4,069,804.98

OTHER FUNDS FOR SPECIAL PURPOSES.

413,092.80	**Bussey Trust** (income thereof, ½ to Bussey Institution, ¼ to Law School, and ¼ to Divinity School), . . .	413,092.80	
50,000.00	**Bright** Legacy, ...	50,000.00	
28,276.24	**Robert Troup Paine** Fund, . . .	29,529.02	
	Bussey Institution, ...	553.23	
1,385.66	Dental Subscription Fund, . . .	1,715.85	
2,882.43	**Bussey** Building Fund, ...	609.02	
152,488.90	**James Arnold** "	152,902.91	
12,002.69	**Arnold** Arboretum "	11,302.29	
42,000.00	**James Savage** Fund, ...	42,000.00	
16,521.61	**Gray** Fund for Engravings, . . .	16,225.10	
21,039.10	**Gore** Annuity Fund, ...	21,581.52	
5,843.72	**Lucy Osgood** Annuity Fund, . .	5,741.05	
50,900.81	**Bemis** Annuity Fund, ...	50,930.81	
2,807.88	**Gospel Church** Fund, ...	2,960.35	
3,171.50	**John Foster** Fund (income to Divinity School, Law School, and Medical School, in turn), ...	3,171.50	
29,939.33	**Henry Harris** Fund, . , ...	29,939.33	
			832,254.78

FUNDS IN TRUST FOR PURPOSES NOT CONNECTED WITH THE COLLEGE.

15,984.47	**Daniel Williams** Fund for the conversion of the Indians, ...	16,006.51	
4,814.94	**Sarah Winslow** Fund, for the Minister and Teacher at Tyngsborough, Mass.,	4,826.47	
			20,832.98
$4,803,938.36			$4,922,892.69

Changes in the Funds during the year ending August 31, 1885.

Total amount of Funds, August 31, 1885, as before stated,		$4,922,392.69	
Total amount of Funds, September 1, 1884, as before stated,		4,803,938.36	
Showing a total increase during the year of . . .			$118,454.33
Which is made up as follows:—			
Gifts forming new Funds or increasing old ones,		$127,917.98	
Increase of Funds established during the year, . . .		97.74	
Credit balances created,		1,823.55	
Increase of Stock Account, by excess of income over expenditure, in College, Library, and University accounts,		1,953.48	
		131,792.70	
Deduct from this amount			
Decrease more than increase of Funds and balances, which appear both at the beginning and end of the year, ...	$6,999.34		
Law School, balance of account spent, . .	6,839.03		
		13,838.37	
			$118,454.33

Net decrease of Funds and balances as above stated,	$13,838.37
Less increase, other than gifts for capital account, as above stated,	3,874.72
Leaving amount of the net decrease of the Funds and balances, excluding gifts for capital account, as is also shown in the following table,	$9,463.65

Statement showing Changes in the Different

Increase of Funds which appear both at the beginning and the end of the year, being the excess of income (including gifts for immediate use) over payments towards the special objects of those Funds.

UNIVERSITY.

Thomas Cotton Fund,	$ .38	
Harris Fellowship,	312.53	
John Thornton Kirkland Fellowship,	259.28	
Rogers Scholarship,	845.62	
Sumner Prize Fund,	101.81	
Retiring Allowance Fund,	1,478.53	
President's Fund,	354.93	
		$3.353.08

COLLEGE.

Hersey Professorship (**Thomas Lee's** gift),	1,119.88	
Hollis Professorship (Divinity),	70.47	
Daniel H. Peirce Fund,	64.47	
Paul Dudley Fund for Lectures,	122.50	
John W. P. Abbott Fund,	205.96	
Henry Flynt's Bequest,	.85	
Abbot Scholarship,	137.05	
Alford "	43.49	
Bartlett "	31.86	
Bassett "	21.42	
Bowditch "	853.59	
Bright " (balance),	107.50	
Class of 1802 Scholarship,	19.60	
" **1815** " (**Kirkland**),	24.22	
" **1817** "	3.68	
" **1828** "	77.16	
" **1841** "	41.98	
" **1852** " (**Dana**),	180.71	
Crowninshield "	401.71	
Ruluff S. Choate "	29.33	
Derby " (**George & Martha**),	35.62	
Greene "	15.15	
Hodges "	385.53	
Levina Hoar "	96.91	
Hollis "	15.31	
Matthews " (balance),	580.38	
Pennoyer "	15.71	
Perkins "	16.73	
Rodger "	34.81	
Henry B. Rogers "	23.49	
Edward Russell "	70.43	
Amount carried forward,	$4,797.50	$3,353.08

Funds during the year ending August 31, 1885.

Decrease of Funds, which appear both at the beginning and the end of the year, being the excess of payments over income received (including gifts for immediate use) for the special objects of those Funds.

UNIVERSITY.

Peter C. Brooks Fund,	$544.48	
John Parker Fellowships,	105.99	
James Walker Fellowship,	169.75	820.22

COLLEGE.

Bigelow Scholarships,	124.79	
Browne "	1.33	
Class of 1814 Scholarship,	35.42	
" **1835** "	7.90	
W. S. Eliot "	10.80	
Farrar "	28.11	
Morey "	92.42	
Sever "	3.03	
Story "	.40	
Gorham Thomas "	27.80	
Townsend "	157.16	
Boylston Prizes for Elocution,	21.89	
Botanic Department Fund,	87.72	
Physical Laboratory Building Fund,	20,396.28	20,995.05

Amount carried forward, ... $21,815.27

Statement showing Changes in the Different

Amounts brought forward, . . .	$4,797.50	$3,353.08
Saltonstall Scholarship **(Mary & Leverett),**	232.84	
" " **(Dorothy), ...**	38.44	
Slade "	45.99	
Sewall "	12.21	
Shattuck "	529.93	
Stoughton "	47.78	
Toppan "	62.24	
Walcott "	15.19	
Whiting "	521.61	
Exhibitions, ...	58.79	
Palfrey Exhibition, ...	6.87	
John Glover Fund, ...	64.07	
Quincy Tufts "	56.27	
Day "	47.19	
Munroe "	92.19	
Lee " for Reading, ...	54.79	
Bowdoin Prizes for Dissertations, ...	285.53	
Hopkins Gift for "Deturs,"	65.94	
Chauncey Wright Fund, ...	27.42	
Herbarium "	1,266.38	
Physical Laboratory Endowment, ...	178.54	
		8,507.71

LIBRARY.

Denny Book Fund, ...	62.71	
Farrar " "	136.58	
Homer " "	14.45	
Lane " "	35.88	
Lowell " "	315.73	
Salisbury " "	42.01	
Sumner " "	117.78	
Tucker " "	13.50	
Ward " "	51.62	
Wales " "	69.72	
		859.98

LAW SCHOOL.

New Professorship, ...		566.78

MEDICAL SCHOOL.

Medical School (balance), ...	2,039.10	
Warren Fund for Anatomical Museum, ...	350.81	
Boylston " for Medical Prizes, ...	210.10	
" " " " Books, ...	137.49	
		2,727.50
Amount carried forward, ...		$16,015.05

Funds during the year ending August 31, 1885. (Continued.)

Amount brought forward, ... $21,815.27

LIBRARY.

Subscription for Library, ...	177.07	
Bowditch Book Fund, ...	41.19	
Bright " "	530.45	
Haven " "	49.77	
Hayward " "	289.53	
Hollis " "	160.85	
Minot " "	564.76	
Osgood " " (**Mary**)	101.40	
" " " (**Lucy**)	8.94	
Sever " "	35.89	
Shapleigh " "	114.72	
Walker " "	178.83	
Sundry gifts, etc. (unexpended balances), . . .	17.79	
		2,271.19

MEDICAL SCHOOL.

Library Fund, ...	222.14

Amount carried forward, ... $24,308.60

Statement showing Changes in the Different

Amount brought forward, . . .		$16,015.05
DIVINITY SCHOOL.		
General Fund, ...	760.05	
Winn Professorship of Ecclesiastical History, .	500.00	
Jackson Foundation, ...	73.18	
J. H. Kendall Scholarship, ...	107.24	
Nancy “ “	27.14	
Adams Ayer Fund, ...	47.62	
Joshua Clapp Scholarship, ...	58.81	
Beneficiary money returned, ...	101.05	
Abner W. Buttrick Fund, ...	103.63	1,778.72
MUSEUM OF COMPARATIVE ZOÖLOGY.		
Sturgis Hooper Fund, ...		260.00
OBSERVATORY.		
David Sears Fund, ...	642.40	
Anonymous Observatory Fund, ...	13.58	655.98
FUNDS FOR SPECIAL PURPOSES.		
Robert Troup Paine Fund, ...	1,252.78	
James Arnold “	414.01	
Gore Annuity “	542.42	
Bemis “ “	30.00	
Gospel Church “	152.47	
Daniel Williams “	22.04	
Sarah Winslow “	11.53	2,425.25
		$21,135.00
Increase of Funds established during the year.		
John Tyndall Scholarship, ...		97.74
Credit balances created,		
Jefferson Physical Laboratory, ...	702.76	
Samuel E. Fitz Fund, ...	75.14	
Foster Fund for Medical Students, ...	492.42	
Bussey Institution, ...	553.23	1,823.55
Increase of Stock Account, by excess of income over expenditures, in College, Library, and University accounts, ...		1,953.43
		$25,009.72
Balance, which is the net decrease of the Funds for the year ending August 31, 1885, apart from gifts for capital account,		9,463.65
Total, ...		$34,478.37

Funds during the year ending August 31, 1885. (*Continued.*)

Amount brought forward, . . .		$24,308.60
DIVINITY SCHOOL.		
Thomas Cary Scholarship, ...	72.36	
George Chapman Scholarships, ...	15.71	
		88.07
OBSERVATORY.		
Josiah Quincy Fund, ...		364.68
FUNDS FOR SPECIAL PURPOSES.		
Bussey Building Fund, ...	2,273.41	
Arnold Arboretum "	700.40	
Gray Fund for Engravings, ...	296.51	
Lucy Osgood Annuity Fund, ...	102.67	
		3,372.99
		$28,134.34
Law School, balance of account spent, ...		6,339.03
Total, ...		$34,473.37

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every fund, in case that sum be either less or more than the actual income of the fund. If the object to which the income of a fund is to be applied be a general one, — like salaries, for example, — no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 55.

TABLE NO. I.

THE UNIVERSITY.

RECEIPTS.

Income of the unappropriated fund heretofore called the Stock Account,	$4,746.04	
Income of the following funds: —		
Insurance and Guaranty,	7,691.00	
Israel Munson,	855.23	
Leonard Jarvis,	916.15	
Samuel D. Bradford,	285.08	
Sever,	488.70	
John C. Gray,	1,357.50	
George B. Dorr,	6,091.41	
Peter C. Brooks,	60.65	
Thomas Cotton,	7.98	
President's,	3,354.98	
Parker Fellowships,	3,094.01	
John Thornton Kirkland Fellowship,	634.28	
Harris Fellowship,	587.58	
James Walker Fellowship,	580.25	
Rogers Scholarship,	1,645.62	
John Tyndall Scholarship,	97.74	
Sumner Prize,	101.81	
Retiring Allowance,	1,478.53	
Seth Turner,	271.50	
Henry T. Morgan.	4,374.25	
Henry Harris, ½ of income,	865.97	
		39,586.16
For the degree of Ph.D.,	240.00	
For care of the **Sarah Winslow** Fund,	6.24	
Sale of Quinquennial Catalogues,	595.25	
From other departments for proportion of expenses of Bursar's office,	405.18	
Balance remaining after dividing the net income among the Funds,	82.73	
From **Robert N. Toppan,** additional gift for prize on Political Science,	150.00	
Amounts carried forward,	$1,479.40	$39,586.16

TABLE I., CONTINUED.

RECEIPTS.

Amounts brought forward, . . .	$1,479.40	$39,586.16
Through **William Gray**, Treasurer, for lecturer on Political Economy, ...	300.00	
From **Henry Lee**, Treasurer Harvard Memorial Hall Fund, a legacy of $500 for Memorial Hall from the late **Seth Turner**, with accrued interest, . . .	565.26	
Insurance repaid by Harvard Dining Association, . . .	225.00	2,569.66
		$42,155.82

PAYMENTS.

Overseers' Expenses.		
Advertising, ...	$53.10	
Printing President's Annual Report, ...	588.36	
Printing Treasurer's " "	131.64	
Printing other reports, auditing Treasurer's accounts, &c., ...	140.00	913.10
Office Expenses.		
President's	170.91	
Treasurer's	462.90	
Bursar's	748.43	
Supt. of Buildings, ...	44.25	
Corporation Rooms (fuel, rent, &c.), ...	1,659.76	3,086.25
Salaries.		
President, ...	8,007.60	
Treasurer, ...	4,000.00	
Secretary of the Board of Overseers, ...	100.00	
Bursar, ...	3,000.00	
Bursar's Assistant, ...	1,000.00	
Secretary at Cambridge, ...	600.00	
For keeping Treasurer's books and copying records and other papers, ...	3,000.00	
Superintendent of Buildings, ...	1,500.00	21,207.60
Fellowships.		
John Parker, ...	3,200.00	
Harris, ...	275.00	
John Thornton Kirkland, ...	375.00	
James Walker, ...	750.00	
Rogers Scholarship, ...	800.00	
Morgan Scholarships, ...	2,000.00	7,400.00
Prizes.		
Robert N. Toppan, in Political Science, . .		150.00
Memorial Hall and Sanders Theatre.		
Repairs, fuel, gas, &c., ...	935.20	
Insurance, ...	1,100.00	2,035.20
Sundries.		
Advertising, ...	21.53	
Labor, &c. on grounds outside of College Yard,	1,588.48	
Amounts carried forward, ...	$1,610.01	$34,792.15

TABLE I., CONTINUED.

PAYMENTS.

Amounts brought forward, ...	$1,610.01	$34,792.15
Repairs and improvements on the President's house,	605.18	
Subscription to Mercantile Agency, ...	200.00	
Watering streets, and water, ...	281.95	
Watchmen, ...	940.82	
Freight, diplomas, &c., ...	43.22	
Printing, ...	406.59	
University Lectures, ...	600.00	
Statue of John Harvard, foundation, re-bronzing, &c., ...	362.50	
Board walks, curb-stones, fences, &c., ...	337.44	
Sewer assessment, ...	147.60	
Quinquennial Catalogue, ...	2,121.80	
College seal, ...	190.00	
Legal services, ...	60.00	7,907.06
		$42,699.21

TABLE No. II.

THE COLLEGE.

RECEIPTS.

From Term Bills.		
Instruction, ...	$150,861.72	
Rents available for general expenses, ...	34,853.38	
Income of Scholarship Funds.		185,715.10
Abbot, ...	137.05	
Alford, ...	43.49	
Bartlett, ...	281.86	
Bassett, ...	296.42	
Bigelow, ...	625.21	
Bowditch, ...	5,853.59	
Bright, ½ income of **Bright** Legacy, ...	1,357.50	
Browne, ...	148.67	
Ruluff Sterling Choate, ...	329.33	
Class of 1802, ...	389.60	
" **1814**, ...	164.58	
" **1815 (Kirkland)**, ...	274.22	
" **1817**, ...	203.68	
" **1828** (accumulating), ...	77.16	
" **1835**, ...	142.10	
" **1841**, ...	216.98	
" **1852 (Dana)** (accumulating), . . .	180.71	
" **1856**, from special investment, . . .	300.00	
Warren H. Cudworth, ...	600.00	
Crowninshield (accumulating), ...	401.71	
Amounts carried forward, ...	$12,023.86	$185,715.10

TABLE II., CONTINUED.

RECEIPTS.

Amounts brought forward, . .		$12,023.86	$185,715.10
George and Martha Derby, ...		285.62	
Wm. Samuel Eliot, ...		289.20	
Farrar, ...		321.89	
Greene, ...		135.15	
Levina Hoar (Town of Lincoln), ...		296.91	
Hodges (accumulating), ...		385.53	
Hollis, ...		265.31	
Matthews (½ of net rents of Hall), ...		5,030.38	
Morey, ...		407.58	
Pennoyer. Interest, ...	$118.21		
Annuity, ...	277.50	395.71	
Perkins, ...		136.73	
Rodger (accumulating), ...		34.81	
Henry Bromfield Rogers.		173.49	
Edward Russell (accumulating), ...		70.43	
Mary and Leverett Saltonstall, ...		232.84	
Dorothy Saltonstall (accumulating), ...		38.44	
Savage, ...		300.00	
Sever, ...		171.97	
Sewall, ...		512.21	
Shattuck, ...		2,429.93	
Slade, ...		295.99	
Story, ...		149.60	
Stoughton (accumulating), ...		47.78	
Gorham Thomas, ...		222.20	
Toppan, ...		362.24	
Townsend, ...		1,342.84	
Walcott, ...		215.19	
Whiting (accumulating), ...		521.61	27,095.44
Received from the Trustee of the **Thayer** Scholarships,		. . . .	3,500.00
Other Beneficiary Funds, income of.			
"Exhibitions,"		513.79	
Palfrey "Exhibition,"		96.87	
Samuel Ward. From special investment, . .		50.00	
John Glover (accumulating), ...		64.07	
Quincy Tufts, ...		591.27	
Moses Day, ...		287.19	
Munroe, ...		554.19	
			2,157.38
Prize Funds, income of.			
Ward Nicholas Boylston Prizes for Elocution,		233.11	
James Bowdoin Prizes for Dissertations, . . .		635.53	
Edward Hopkins Gift for "Deturs,"		291.32	
Chauncey Wright.		27.42	
			1,187.38
Amount carried forward, .		. . . .	$219,655.30

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward, ...		$219,655.30
Funds for Instruction.		
Income of the **Alford** Professorship, ...	$1,506.77	
Boylston "	1,538.70	
Eliot "	1,173.97	
J. Phillips's addition to **Eliot** Prof.,	500.00	
Erving Professorship, ...	190.05	
Fisher "	1,954.31	
Hersey "	658.67	
Hollis " (Mathematics), . .	203.46	
McLean "	2,338.32	
Perkins "	1,140.30	
Plummer "	1,358.59	
Pope "	2,850.75	
Rumford "	2,914.64	
Smith "	1,256.50	
Fund for Permanent Tutors, . . .	881.83	
Thos. Lee Fund for the **Hersey** Prof.	1,119.88	
" " " " Reading, . . .	854.79	
Class Subscription, ...	6,968.48	
Henry Flynt, ...	17.81	
Hollis Professorship of Divinity, .	1,870.47	
Paul Dudley Fund (accumulating),	122.50	
Gifts for salaries, ...	2,000.00	
		33,420.79
Botanic Garden.		
Income of Fund, ...	2,303.30	
" " the **Lowell** Fund, ...	2,871.49	
Estimated value of use of house by Prof. Gray,	1,000.00	
On account of gifts for new greenhouse, &c., . .	4,625.00	10,799.79
Herbarium. Income of Fund, ...	966.38	
Gift for Curator's salary, 2 years, ...	2,000.00	
Sale of specimens, &c., ...	37.75	3,004.13
Income of **Jonathan Phillips's** unrestricted Fund,	1,710.45	
" " **John A. Blanchard's** " "	57.02	
" " **Daniel H. Pierce** Fund, ...	644.74	
" " **J. W. P. Abbot** " (accumulating),	205.96	
" " Physical Laboratory Endowment, ...	3,231.62	
" " " " Building Fund, . . .	161.91	6,011.70
Sundries.		
Fees for admission examinations, &c., ...	728.00	
Sales of grass and plaster casts, ...	90.00	
Sale of old examination papers, ...	54.97	
For Printing by College Press for other departm'ts,	3,703.87	
For use of rooms by College officers, ...	150.00	
Amounts carried forward,	$4,726.84	$272,891.71

TABLE II., CONTINUED.

RECEIPTS.

Amounts brought forward, . .	$4,726.84	$272,891.71
Sale of tickets to Commencement Dinner of 1885,	922.00	
For use of lockers at Gymnasium, ...	1,802.00	
Fees for use of Gymnasium, ...	40.00	
For use of Gymnasium by other departments, .	1,212.61	
Sale of Catalogues and Directories, ...	849.41	
From **Harold Whiting** for Physics 2, . . .	200.00	9,752.86
Total receipts, ...		$282,644.57

PAYMENTS.

Paid the incumbents of the following Scholarships.

Bartlett, ...	250.00
Basset, ...	275.00
Bigelow, ...	750.00
Bowditch, ...	5,000.00
Bright, ...	1,250.00
Browne, ...	150.00
Ruluff Sterling Choate, ...	300.00
Warren H. Cudworth, ...	600.00
Class of 1802, ...	250.00
" **1814**, ...	200.00
" **1815 (Kirkland)**, ...	250.00
" **1817**, ...	200.00
" **1835**, ...	150.00
" **1841**, ...	175.00
" **1856**, ...	300.00
George and Martha Derby, ...	250.00
Wm. Samuel Eliot, ...	300.00
Farrar, ...	350.00
Greene, ...	120.00
Levina Hoar, ...	200.00
Hollis, ...	250.00
Matthews, ...	4,500.00
Morey, ...	500.00
Pennoyer, ...	380.00
Perkins, ...	120.00
Henry Bromfield Rogers, ...	150.00
Savage, ...	300.00
Sever, ...	175.00
Sewall, ...	500.00
Shattuck, ...	1,900.00
Slade, ...	250.00
Story, ...	150.00
Thayer, ...	3,500.00
Amount carried forward, . . .	$23,995.00

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward, . .		$23,995.00	
Gorham Thomas,		250.00	
Toppan,		300.00	
Townsend,		1,500.00	
Walcott,		200.00	26,245.00
Paid other Beneficiaries.			
Exhibitions,		455.00	
Palfrey Exhibition,		90.00	
Samuel Ward Income,		50.00	
Quincy Tufts " (part of),		535.00	
Day Fund " " "		240.00	
Munroe Fund " " "		462.00	1,832.00
Prizes. Boylston Prizes for Elocution,		255.00	
Bowdoin Prizes for Dissertations		350.00	
"Deturs" from Hopkins Fund		225.38	830.38
Salaries for instruction,			152,175.56
Repairs and improvements on College Edifices not valued on Treasurer's books,			4,753.31
Insurance on College Edifices, &c. not valued on Treasurer's books,			1,295.83
Botanic Garden, for labor, repairs, and materials,		7,087.51	
paid on account of new greenhouse,		3,800.00	10,887.51
Herbarium, for labor, repairs, and materials,			1,737.75
Gymnasium.			
Salaries and wages,		5,153.58	
Janitors and cleaning,		1,112.53	
Gas, water, and sundries,		996.17	
Fuel,		502.90	
Apparatus, furniture, and repairs,		1,167.61	
Insurance,		15.00	8,947.79
Jefferson Physical Laboratory.			
Spent on building,		20,558.19	
Laboratory expenses paid from income,		2,350.32	
" " " by the College,		600.00	23,508.51
General Expenses.			
Appropriations for collections and laboratories.			
Physical Apparatus (Prof. Lovering),	$600.00		
Mineral and Chemical (Prof. Cooke),	800.00		
Rumford (Prof. Gibbs),	300.00		
Botanical (Prof. Farlow),	350.00		
Biological (Prof. Goodale),	35.00		
Geological (Prof. Shaler),	200.00		
Zoölogical (Asst. Profs. Faxon and Mark),	70.00		
Amounts carried forward, . .	$2,355.00		$232,213.64

Table II., continued.

PAYMENTS.

Amounts brought forward, . .	$2,355.00		$232,213.64
Fine Arts (Prof. Norton), ...	200.00		
Physical (Prof. Trowbridge), ...	300.00		
Drawing (Instructor Moore), ...	200.00	3,055.00	
Appleton Chapel.			
Preaching and morning services, . . .	1,620.00		
Organist and Choir-master, ...	1,000.00		
Choir, ...	800.00		
Books, hymnals, and music, ...	96.43		
Fuel, Gas, Repairs, &c., ...	1,009.43		
Services and wages, ...	255.73	4,781.59	
Admission examinations, ...		1,564.26	
Advertising, ...		421.80	
Cleaning and care of College buildings not valued on Treasurer's books, ...		8,435.91	
College Yard expenses, labor and material, &c., .		2,389.18	
Commencement Dinner, 1885, ...		690.19	
Dean's and Registrar's Office, clerk, stationery, postage, copying, &c., ...		2,305.09	
Expenses in Physics 2 (Whiting gift), ...		200.00	
Fuel, &c., ...		2,405.44	
Furniture, ...		598.09	
Freight, diplomas, and sundries, ...		339.71	
Gas, ...		1,112.69	
Maps, ...		50.00	
Music, Class-Day, 1885, ...		125.00	
" Commencement, 1885, ...		185.00	
Pews hired in Cambridge churches, ...		1,041.00	
Printing office, expenses, ...		6,368.30	
Services of examiners and proctors, ...		3,392.63	
" " undergraduates, ...		780.80	
" in Chemical Laboratory (part of), . . .		80.32	
Watchman, ...		124.50	
Water rates, ...		282.70	
Athletic Committee expenses, ...		69.00	
			40,798.20
Total payments, ...			$273,011.84

Table No. III.

THE LIBRARY.

RECEIPTS.

Income of the following Funds for the purchase of books.	
Subscription for Library, ...	$584.54
Nathaniel I. Bowditch, ...	114.30
Amount carried forward, ...	$698.84

TABLE III., CONTINUED.

RECEIPTS.

Amount brought forward, ...		$698.84	
Bright, ½ income of the **Bright** Legacy,	$1,357.50		
Interest on balance, ...	35.19	1,392.69	
Denny, ...		285.89	
Eliza Farrar, ...		288.66	
Horace A. Haven, ...		200.58	
George Hayward, ...		301.75	
Thomas Hollis, ...		136.40	
Sidney Homer, ...		114.25	
Frederick A. Lane, ...		289.91	
Lowell, ...		1,132.92	
Charles Minot. Interest, ...	$10.53		
From special investment, . . .	4,200.00	4,210.53	
Lucy Osgood, ...		391.07	
Mary Osgood, ...		389.06	
Stephen Salisbury, ...		285.13	
Sever, ...		1,091.97	
Samuel Shapleigh, ...		226.05	
Charles Sumner, ...		2,028.92	
Ichabod Tucker. From special investm't,	$200.00		
Interest on unexpended balance,	3.80	203.80	
Thomas W. Ward, ...		285.18	
George W. Wales. Gift, ...		200.00	
James Walker, ...		876.56	15,030.11
Gift from Dante Society, ...		50.00	
" " Class in History 13, '85, ...		14.38	64.38
James Savage Fund for general expenses (½ of income),		990.30	
Daniel Austin " " " "		304.08	
Eben Wright " " " "		5,430.00	
Jarvis " " " "		11.29	6,735.67
Subscription to aid in publishing the Library Bulletin, ...			50.00
Fees for use of Library, ...		155.00	
Sales of Bulletins, Calendars, and duplicates, ...		94.00	
Payments for books lost, ...		16.50	265.50
			$22,145.66

PAYMENTS.

For Books from	
Subscription Fund, ...	$761.61
Bowditch "	155.49
Bright "	1,923.14
Denny "	223.18
Farrar "	152.08
Amount carried forward,	$3,215.50

TABLE III., CONTINUED.

PAYMENTS.

Amount brought forward,	$3,215.50	
Haven Fund,	250.35	
Hayward "	591.28	
Hollis "	297.25	
Homer "	99.80	
Lane "	254.03	
Lowell "	817.19	
Minot "	4,787.29	
Lucy Osgood	400.01	
Mary Osgood	490.46	
Salisbury "	243.12	
Sever "	1,127.86	
Shapleigh "	340.77	
Sumner "	1,911.14	
Tucker "	190.30	
Ward "	233.51	
Wales "	130.28	
Walker "	1,055.39	
Dante Society money,	60.89	
Duplicate "	26.50	
Subscription of 1881,	.41	
Class in History 13, '85,	10.87	16,534.20
Salaries and wages,	18,086.97	
Binding,	1,121.02	
Stationery and postage,	428.65	
Fuel,	768.78	
Repairs and improvements,	312.27	
Freight, water, and sundries,	375.96	
Janitors and cleaning,	487.43	
Furniture,	100.15	
Insurance on steam boiler,	15.00	
Bulletins, and other printing,	1,496.33	23,192.56
		$39,726.76

TABLE No. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of the following Funds applicable to Salaries.	
General Fund,	$1,314.44
Benjamin Bussey Professorship,	2,040.81
Parkman Professorship,	369.67
John Hancock Professorship,	826.23
Amount carried forward,	$4,551.15

TABLE IV., CONTINUED.

RECEIPTS.

Amount brought forward,	$4,551.15	
Winn Professorship of Ecclesiastical History,	2,462.29	
Samuel Dexter,	1,101.20	
Henry Lienow,	498.75*	
Mary P. Townsend,	285.08	
Winthrop Ward,	114.03	
Samuel Hoar,	57.02	
Abraham W. Fuller,	57.02	
Caroline Merriam,	57.02	
Joseph Baker,	427.61	
Thomas Tileston of New York Endowment,	2,172.00	
Oliver Ames,	923.10	
Henry P. Kidder,	548.00	
Abby Crocker Richmond,	54.30	
New Endowment,	3,815.61	17,119.13
Income of Scholarship Funds.		
Thomas Cary,	277.64	
George Chapman,	124.29	
Joshua Clapp,	183.81	
Jackson Foundation,	713.18	
J. Henry Kendall,	200.58	
Nancy Kendall,	167.14	1,666.64
Income of other Funds.		
Joshua Clapp,	118.27	
William Pomeroy,	57.02	
Hannah C. Andrews,	28.51	
Lewis Gould,	49.47	
Daniel Austin,	43.44	
Abner W. Buttrick,	628.63	
Adams Ayer,	47.62	
Interest on Beneficiary money returned,	101.05	1,074.01
Term Bills.		
For Instruction,	1,396.61	
For Rents,	2,020.00	3,416.61
Sale of grass,		15.00
Benjamin Bussey Trust (½ of net income for use of this School),		2,174.04
		$25,465.43

PAYMENTS.

For Salaries for Instruction,	$18,266.66
Services of students,	735.86
Labor, repairs, and improvements,	595.25
Cleaning and care of rooms,	707.00
Books and binding,	247.00
Amount carried forward,	$20,551.77

TABLE IV., CONTINUED.

PAYMENTS.

Amount brought forward,	$20,551.77	
Printing,	275.22	
Fuel,	182.25	
Gas,	186.20	
Water rates,	30.00	
Stationery, postage, diplomas, and sundries,	80.78	
Collation,	80.00	
Furniture,	37.78	
Proportion of expenses of Bursar's office,	50.89	
" " " " Gymnasium,	152.31	
Advertising,	80.00	21,707.20
Paid the incumbents of the following Scholarships.		
Jackson Foundation,	$640.00	
Thomas Cary,	350.00	
George Chapman,	140.00	
Joshua Clapp,	125.00	
Nancy Kendall,	140.00	
J. Henry Kendall,	93.34	1,488.34
Paid beneficiaries from the **A. W. Buttrick** Fund,	525.00	
" beneficiary from **William Pomeroy** Fund,	54.29	579.29
		$23,774.83

TABLE NO. V.

LAW SCHOOL.

RECEIPTS.

Income of the following Funds.			
Law School Balance,		$344.21	
Nathan Dane Professorship,		855.23	
Benjamin Bussey "		1,302.11	
Isaac Royall "		452.92	
New Professorship.			
From special investment,	$2,404.18		
Interest,	2,662.60	5,066.78	
Law School Book Fund,		1,738.74	
Benjamin Bussey Trust (½ of net income for use of this School),		2,174.04	11,934.03
Term Bills.			
For instruction,			22,110.00
Sale of books,			84.51
Additional gifts for Austin Hall from **Edward Austin**, Esq.,			5,500.00
Loan of $50, repaid with interest,			116.25
			$39,744.79

TABLE V., CONTINUED.

PAYMENTS.

For Salaries for Instruction,	$20,250.00	
Librarian and Assistants,	2,832.85	
Janitors, cleaning, &c.,	843.33	
Books and binding,	2,358.83	
Fuel,	780.73	
Gas,	467.78	
Printing	256.50	
Scholarships,	600.00	
Labor, repairs, and improvements,	483.20	
Stationery and postage,	125.77	
Freight, diplomas, and sundries,	140.90	
Water rates,	70.42	
Furniture,	25.25	
Account of new building,	7,803.18	
Services of examiners and proctors,	54.75	
Proportion of expenses of Bursar's office,	299.48	
" " " " Gymnasium,	896.28	
Insurance,	15.00	$38,304.25

TABLE No. VI.

MEDICAL SCHOOL.

RECEIPTS.

Income of the following Funds.			
Medical School, balance,		$2,864.98	
Jackson,		1,042.18	
Warren, for Anatomical Museum,		663.49	
Ward Nicholas Boylston, for Medical Prizes,		212.10	
Ward Nicholas Boylston, for Medical Books,		137.49	
George C. Shattuck,		930.10	
Hersey Professorship, ⅗ income of the fund,		439.11	
Medical Library Fund,		163.06	
Quincy Tufts,		108.60	
Edward M. Barringer. Interest,	$1,352.78		
From special investment,	50.00	1,402.78	
Henry Harris, ½ of income,		865.97	
Mary W. Swett,		554.57	
Samuel W. Swett,		859.73	
Samuel E. Fitz. From special investment,		75.14	
Foster Fund for Medical Students.			
Unexpended balance in hands of Dr. Ellis, returned,	$276.65		
Interest,	15.26		
Income of **John Foster** Fd. every 3d year,	172.24	464.15	10,783.45
Amount carried forward,			$10,783.45

TABLE VI., CONTINUED.

RECEIPTS.

Amount brought forward,		$10,783.45
From students for instruction,	48,813.00	
" " for graduation fees,	1,800.00	
" " in Chemical Laboratory, breakage and chemicals,	1,425.15	
" " in Practical Anatomy, for material,	666.00	52,704.15
From Dental and Veterinary Schools for Laboratory instruction,		400.00
Subscription to the Building Fund,		500.00
Gift for special work in Pathology,		200.00
		$64,587.60

PAYMENTS.

Boylston Medical Prizes. Advertising,		$12.00	
Warren Anatomical Museum.			
Expenses and additions to collection,		312.68	
Chemical Laboratory,		1,493.30	
Physiological Laboratory,		400.00	
Practical Anatomy and Surgery,		1,528.01	
Pathological Anatomy,		44.30	
Descriptive "		31.05	
Obstetrics,		276.85	
Histology,		167.81	
Materia Medica,		50.00	
Bandaging,		51.27	
Pathology (special investigation),		200.00	
Embryology,		75.00	
Children's Diseases,		143.89	
Salaries for instruction,		44,720.00	
Repairs and improvements,		1,380.71	
Scholarships,		1,220.00	
Beneficiaries from Foster income,		150.00	52,251.87
General Expenses.			
Advertising and catalogues,	$626.45		
Alcohol,	52.36		
Books, from Library Fund,	385.20		
Diplomas,	84.25		
Fuel,	1,055.38		
Gas,	833.85		
Insurance,	25.00		
Printing,	309.73		
Services and wages,	5,058.48		
Stationery, postage, and sundries,	284.61		
Water rates,	547.50		9,262.81
			$61,514.68

TABLE No. VII.

DENTAL SCHOOL.

RECEIPTS.

Income of Subscription Fund,		$80.42	
Term bills, for instruction,	$5,580.00		
Laboratory supplies and breakage,	43.03	5,623.03	
Fees from Infirmary,	1,333.56		
Laboratory,	327.50	1,661.06	
Sale of house No. 50 Allen St.,	9,400.00		
Received for unexpired insurance,	25.60	9,425.60	
Sale of gold scraps, &c.,		82.99	
			$16,873.10

PAYMENTS.

Advertising and catalogues,	$186.39	
Care of rooms and cleaning,	648.09	
Drugs, chemicals, and sundries,	109.67	
Diplomas,	15.05	
Fuel,	239.80	
Gas,	114.60	
Gold foil and metals,	674.80	
Instruments and apparatus,	521.08	
Interest on debt,	468.24	
Printing,	50.50	
Repairs and improvements,	332.66	
Salaries for instruction,	2,915.00	
Stationery and postage,	73.30	
Taxes,	66.30	
Water rates,	115.50	
Expenses on sale of house No. 50 Allen St.,	225.80	
Medical School, for Laboratory instruction,	200.00	
Books,	10.00	
		$6,965.78

TABLE No. VIII.

LAWRENCE SCIENTIFIC SCHOOL, AND MUSEUM OF COMPARATIVE ZOÖLOGY.

RECEIPTS.

Income of the following Funds.

Professorship of Engineering,		$2,107.22
Professorship of Chemistry,		155.35
Abbott Lawrence,		3,341.40
James Lawrence,		2,735.36
John B. Barringer. Interest,	$1,546.84	
From special investment,	200.00	1,746.84
Amount carried forward,		$10,086.17

TABLE VIII., CONTINUED.

RECEIPTS.

Amount brought forward,		$10,086.17	
Gray Fund for Zoölogical Museum,		2,715.00	
Sturgis Hooper,		5,430.00	
Agassiz Memorial. Interest,	$14,327.54		
From special investment,	1,849.70	16,177.24	
Teachers and Pupils,		412.35	
Humboldt,		420.34	
Permanent Fund for Museum of Zoölogy,		6,378.57	
			41,619.67
Term Bills, for Instruction,			4,516.67
			$46,136.34

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.

Gray,	$2,715.00	
Agassiz Memorial,	9,590.07	
Teachers and Pupils,	412.35	
Humboldt,	420.34	
Permanent,	6,378.57	
		19,516.33
Salaries for instruction,	15,291.40	
Expenses in Geology,	170.00	
Instruments and apparatus,	26.00	
Books, Engineering Department,	86.38	
Printing,	41.50	
Fuel,	275.00	
Gas, freight, and sundries,	18.84	
Janitor and cleaning,	345.75	
Labor and repairs,	132.24	
Expenses Chemical Laboratory (part of),	614.52	
Scholarships,	750.00	
Interest on advances,	222.29	
Water rates,	13.12	
Proportion of expenses of Bursar's office,	54.81	
" " " " Gymnasium,	164.02	
		18,205.87
		$37,722.20

TABLE No. IX.

OBSERVATORY.

RECEIPTS.

Income of the following Funds.

Edward B. Phillips,	$5,988.96
James Hayward,	1,140.30
Amount carried forward,	$7,129.26

TABLE IX., CONTINUED.

RECEIPTS.

Amount brought forward,	$7,129.26	
David Sears,	1,284.79	
Josiah Quincy,	594.15	
James Savage (½ of net income),	990.30	
Charlotte Harris,	108.60	
Thomas G. Appleton,	271.50	
New Endowment,	2,244.06	12,622.66
From sale of time signals,	2,725.00	
" " " Observatory Annals,	36.30	
" " " grass,	35.00	
" " " engravings,	11.00	2,807.30
Subscription for salary of Assistant,		1,080.00
Return premium of insurance,		8.25
		$16,518.21

PAYMENTS.

Salaries and wages,	$11,913.77	
Cleaning and care of Observatory,	249.73	
Gas,	61.56	
Instruments and apparatus, including repairs on same,	1,141.75	
Repairs and improvements on buildings and grounds,	1,067.31	
Stationery, postage, and telegraphing,	314.48	
Fuel,	76.20	
Books and binding,	112.83	
Water rates,	50.00	
Printing,	1,309.36	
Freight, chemicals, and sundries,	133.20	
Furniture,	53.08	
Advertising,	7.15	
Interest on advances,	52.56	$16,542.98

TABLE No. X.

BUSSEY INSTITUTION.

RECEIPTS.

From **Bussey** Trust (½ net income),	$4,348.08	
From **Bussey** Building Fund,	33.07	
Fees for Instruction,	680.00	
Sale of coal to Arboretum,	78.82	
Sale of wood, hay, and sundries,	882.87	
From **Arnold** Arboretum for rent of greenhouses,	50.00	
Board of horses, cattle, &c.,	1,890.67	$7,963.51

PAYMENTS.

For Salaries,	$4,200.00
Books,	59.17
Fuel for school building,	53.50
Amount carried forward,	$4,312.67

Table X., continued.

PAYMENTS.

Amount brought forward,	$4,312.67	
Services and wages,	1,466.88	
Horticultural Department, expenses,	687.52	
Repairs and improvements,	180.75	
Grain,	330.53	
Insurance,	90.00	
Subscription to Veterinary Hospital,	10.00	
Advertising,	56.20	
Printing,	4.50	
Horse shoeing,	80.10	
Seeds,	24.96	
Farming tools,	96.64	
Freight, telegrams, weighing hay, &c.,	54.53	
Water,	15.00	$7,410.28

Bussey Building Fund.

Receipts.

Income of unexpended balance of Fund,	$33.07

Payments.

Income carried to Bussey Institution,	$33.07

James Arnold Fund.

Receipts.

Income of Fund,	$8,280.15

Payments.

19/20 of income carried to Arnold Arboretum,	$7,866.14

Arnold Arboretum.

Receipts.

Income of unexpended balance of Fund,	$651.76	
From James Arnold Fund,	7,866.14	
Sale of wood, grass, &c.,	700.63	
		$9,218.53

Payments.

Salary of Director and Assistant,	$3,000.00	
Expenses of Arboretum,	6,918.93	
		$9,918.93

School of Veterinary Medicine.

Receipts.

Term bills, for instruction,	$2,116.00	
Subscriptions to Veterinary Hospital,	1,320.00	
Fees from Hospital,	10,519.32	
" " Forge,	2,465.49	
		$16,420.81

Table X., continued.

Payments.

Salaries and wages,	$8,409.23	
Instruments and apparatus,	70.01	
For account of new building,	7,099.22	
Rent,	1,280.00	
Hay, straw, and grain,	1,855.32	
Shoes, nails, iron, tools, &c.,	468.38	
Printing,	43.50	
Postage, stationery, drugs, and sundries,	1,066.21	
Repairs,	267.15	
Subjects,	29.00	
Fuel,	207.76	
Water,	37.95	
Gas,	98.25	
Telephone,	127.50	
Taxes,	411.40	
Board of horses, &c. at Bussey Institution,	1,100.58	
Interest on advances,	737.88	
Advertising,	133.50	
Furniture and fixtures,	85.00	
Medical School for Laboratory instruction,	200.00	
Legal services,	25.00	
Insurance,	177.70	
		$23,930.54

Table No. XI.

MISCELLANEOUS FUNDS.

Bussey Trust.

Receipts.

Net income from Real Estate,		$14,996.16

Payments.

Annuities,	$6,300.00	
One-half of the remaining income to Bussey Institution,	4,348.08	
One-quarter " " " Divinity School,	2,174.04	
" " " " " Law School,	2,174.04	
		$14,996.16

Gray Fund for Engravings.

Receipts.

Interest on Fund,	$866.57

Payments.

To the Treasurer of the Museum of Fine Arts,	$1,163.08

TABLE XI., CONTINUED.

Annuity Funds.

Receipts.

Gore, interest,	$1,142.42	
Lucy Osgood, interest,	317.33	
Anonymous Observatory, income from special investment, &c.,	733.58	
Bemis, interest,	2,715.00	
		$4,908.33

Payments.

Gore, annuities,	$600.00	
Lucy Osgood, annuity,	420.00	
Anonymous Observatory, annuity,	720.00	
Bemis, annuity,	2,685.00	
		$4,425.00

James Savage Fund.

Receipts.

Interest on Fund,		$2,280.60

Payments.

Scholarship,	$300.00	
One-half the remaining income to Library,	990.30	
" " " " Observatory,	990.30	
		$2,280.60

Bright Legacy.

Receipts.

Interest on Fund,		$2,715.00

Payments.

One-half income to **Bright** Book Fund,	$1,357.50	
One-half income to Scholarship Fund,	1,357.50	
		$2,715.00

Daniel Williams Fund.

Receipts.

Interest on Fund,		$867.93

Payments.

Treasurer of Herring Pond Indians,	$281.96	
" " Mashpee Indians,	563.93	
		$845.89

Sarah Winslow Fund.

Receipts.

Interest on Fund,		$261.45

Payments.

Minister at Tyngsborough, Mass.,	$121.84	
Teacher at " "	121.84	
Commission on income credited to University,	6.24	
		$249.92

TABLE XI., CONTINUED.

Sundry Accounts.

Receipts.

Gospel Church Fd. (accumulat'g).	Interest on Fund,	$152.47	
Robert Troup Paine Fd. "	From special investm't,	1,252.78	
Advances to			
Observatory,	from general investments,	302.49	
School of Veterinary Medicine,	" "	7,509.73	
Law School,	" "	218.28	
			$9,435.75

Payments.

Annuity for Class of 1802, ...	$120.00	
Advances repaid,		
Agassiz Memorial Fund, ...	6,587.17	
Lawrence Scientific School, ...	1,566.97	
Bussey Institution, ...	2,273.41	
Law School Building Fund, ...	7,431.07	
Dental School, ...	9,907.32	
		$27,885.94

GENERAL SUMMARY OF THE TABLES.

			Receipts.	Payments.
Table	I.	University, ...	$42,155.82	$42,699.21
Table	II.	College, ...	282,644.57	273,011.84
Table	III.	Library, ...	22,145.66	39,726.76
Table	IV.	Divinity School, ...	25,465.48	23,774.83
Table	V.	Law School, ...	39,744.79	38,304.25
Table	VI.	Medical School, ...	64,587.60	61,514.68
Table	VII.	Dental School, ...	16,873.10	6,965.78
Table	VIII.	Lawrence Scientific School and Museum of Comparative Zoölogy,	46,136.34	37,722.20
Table	IX.	Observatory, ...	16,518.21	16,542.98
Table	X.	Bussey Institution, ...	7,963.51	7,410.28
		Bussey Building Fund, ...	33.07	33.07
		James Arnold Fund, ...	8,280.15	7,866.14
		Arnold Arboretum, ...	9,218.53	9,918.93
		School of Veterinary Medicine, . .	16,420.81	23,930.54
Table	XI.	Bussey Trust, ...	14,996.16	14,996.16
		Gray Fund for Engravings, ...	866.57	1,163.08
		Annuity Funds, ...	4,908.33	4,425.00
		Daniel Williams Fund, ...	867.93	845.89
		Sarah Winslow Fund, ...	261.45	249.92
		James Savage Fund, ...	2,280.60	2,280.60
		Bright Legacy, ...	2,715.00	2,715.00
		Sundry Accounts, ...	9,435.75	27,885.94
			$634,519.43	$643,983.08
				634,519.43
			Balance	$9,463.65

Which is the net decrease of the Funds and balances, excluding gifts for capital account, as also shown on page 27.

Certificate of the Joint Committee of the Corporation and Overseers of Harvard College, for examining the Books and Accounts of the Treasurer entered in the Journal kept by him.

We, the undersigned, a joint committee of the Corporation and Overseers of Harvard College to examine the books and accounts of the Treasurer for the year ending August 31, 1885, have examined and audited the Cash book from pages 254 to 293, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were received by him and on hand at the beginning of said year, are now in his possession, or are fully accounted for by entries made therein. We have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

We have carefully examined all notes, bonds, mortgages, and other securities invested during the said year, and are of opinion that all such investments have been judiciously made and are amply secured.

We have in like manner satisfied ourselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

The Committee have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

MARTIN BRIMMER,
J. Q. ADAMS,
} *Committee on the part of the Corporation.*

HENRY P. KIDDER,
GEORGE O. SHATTUCK,
ROGER WOLCOTT,
CHARLES HENRY PARKER,
ISRAEL M. SPELMAN,
GEORGE B. CHASE,
} *Committee on the part of the Board of Overseers.*

Boston, Dec. 31, 1885.